STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

FINAL DRAINAGE REPORT

I-295 EXIT 15 (U. S. ROUTE 1)
INTERCHANGE IMPROVEMENT
YARMOUTH, ME

WIN 11086.00, 17490.00

Prepared by:

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November 26, 2012

I-295 EXIT 15 (U. S. ROUTE 1)
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DRAINAGE REPORT

INTERCHANGE STORMWATER MANAGEMENT

Interchange Existing Conditions

The existing conditions drainage system includes open grassed ditches/channels located along I-295 and the ramps, which convey stormwater to culverts that carry the flow under I-295 and the ramps for discharge to receiving waters. Drainage in the study area generally flows from southwest to northeast where it discharges to an unnamed stream and then to the Royal River. No drainage flows to an "urban impaired stream" or "lake most at risk".

Existing Drainage System

Northbound Off Ramp - Approximate Sta. 100+00 to 112+50:
Southwest of the Route 1 overpass, roadway runoff reaches, either by overland flow or through catch basins and cross-connections from the median, a grassed ditch on the outside/south side of I-295 Northbound. Water collected in this ditch flows northeasterly to a headwall and then into a 24-inch reinforced concrete pipe (RCP) that traverses the highway to the southbound exit ramp triangle formed by I-295, Route 1 and the Southbound Off Ramp. Flows reaching this location are conveyed through ditches and pipes under the exit ramp to the powerline clear-cut area and the Yarmouth Woods area. This area discharges to an unnamed stream, which eventually discharges to the Royal River.

Northbound Off Ramp - Approximate Sta. 112+50 to 128+00 and I-295 Sta. 456+00 to 468+50:
Northeast of the Route 1 overpass, stormwater flow is collected in ditches along the southern side of I-295 Northbound from overland runoff or though catch basins in the median, and then piped to the southbound exit ramp. Stormwater flowing to the I-295 Northbound ditches includes runoff from the Exit 15 Northbound Off Ramp. The ramp has ditches along both sides of the roadway that predominantly flow toward I-295. The runoff from the Northbound Off Ramp is conveyed with the highway runoff through two 24" corrugated metal pipes (CMP) to the southbound exit ramp triangle on the opposite side of the highway. As stated previously, flows reaching the southbound exit ramp triangle are conveyed through ditches and pipes under the exit ramp to the powerline clear-cut area and the Yarmouth Woods area.

Southbound Off Ramp – Approximate Sta. 301+00 to 316+00 and Route 1 Northbound 463+00 to 466+00:
Stormwater from the existing Southbound Off Ramp ultimately reaches the same unnamed stream as the stormwater that has been collected and piped across the highway from the northbound infrastructure. Some of the runoff from the exit ramp flows into the triangle and then though the pipe network, but most of the runoff from I-295 Southbound and the Southbound Off Ramp flows north to the open space near the powerline clear-cut area and the unnamed stream that flows under Yarmouth Woods and ultimately to Royal River.

Route 1 Northbound Sta. 466+00 to 473+00:
Runoff from the roadway is conveyed in a ditch northerly along Route 1 Northbound until its intersection with Yarmouth Woods. At the intersection, the runoff follows the southern side of Yarmouth Woods road to the unnamed stream, then discharges to the stream and is conveyed under Yarmouth Woods and ultimately to the Royal River.

Route 1 Southbound south of I-295 overpass Sta. 442+00 to 458+00:
Runoff from Route 1 Southbound is conveyed to the wooded area to the west of Route 1. Stormwater flows that do not infiltrate through the wooded area reach the ditch on the south side of I-295 Northbound and are conveyed under the highway through a 24" RCP to the southbound exit ramp triangle on the opposite side of the highway.

I-295 Sta. 468+00 to 479+50:
Stormwater is collected in ditches along both I-295 Northbound and Southbound, and flows to the north. Stormwater runoff to the median from the I-295 Northbound and Southbound between Sta. 467+50 and 472+00 is conveyed under I-295 Southbound through a 15" CMP to the drainage ditch on the north side of the Southbound highway at approximate station 472+00. The ditches mentioned here are assumed to follow the highway to the northwest to where they meet the unnamed stream, with final discharge of the drainage flows to the Royal River.

Existing Land Use

Where not paved for travel ways, the area is primarily wooded. Just off the roadway, the drainage ditches are generally grassed.

Soils

Geospatial soil data was obtained from the Natural Resources Conservation Service (NRCS). Hydrologic soil groups, defined by minimum infiltration rates, for the project area are shown on Figure 1. Note that the project area is approximately 82% Group C/D soils, defined by low to very low infiltration rates, less than 15% Group B soils, defined by moderate infiltration rates, less than 3% Group C soils, defined by low infiltration rates, and less than 1% Group A soils, defined by high filtration rates. Soils with lower infiltration rates have a higher runoff potential and generally reduce the potential for BMPs that provide infiltration.

Existing Drainage Catchment Delineations

The project area was delineated into nine drainage catchments tributary to points of analysis. Figure 2 shows the existing conditions drainage catchment areas and Table 2.6 provides the total area and impervious area for each delineated catchment. The points of analysis were generally selected as locations where stormwater runoff enters a closed system to pass under a roadway.

Table 2.6 - Existing Delineated Catchment Area Summary

Catchment	Total Area (acres)	Impervious Area (acres)	Percent Impervious (%)
1	13.49	2.26	16.8
2	8.38	1.74	20.8
3	9.35	0.25	4.9
6	2.66	0.17	6.4
7	6.25	1.58	25.3
8	1.38	0.19	13.5
10	0.34	0.16	47.7
11	0.16	0.04	27.4
12	1.09	0.42	38.4
Total	44.10	6.81	15.8

Existing Hydrology

Stormwater flows were calculated using HydroCAD. The model was used to develop hydrographs of drainage areas based on the Soil Conservation Service (now Natural Resources Conservation Service) TR-20 methodology. The project was evaluated for the 2-, 10-, and 25-year storm frequencies having a 24-hour duration. The depth of rain associated with the project events are provided in Table 2.7. Modeling was performed using the Type III, 24-hour rainfall distribution and a normal antecedent moisture condition. Table 2.8 summarizes the peak flow rates for the existing drainage catchments.

Table 2.7 - Rainfall Events

Event Frequency	Depth (inches)
2 Yr	3.0
10 Yr	4.7
25 Yr	5.5

Table 2.8 - Existing Peak Runoff Rates

Catchment	Peak Flow (cfs) 2-Year	10-Year	25-Year	50-Year
1	9.1	20.4	26.0	30.3
2	7.2	15.8	20.1	23.4
3	7.9	19.1	24.9	29.4
6	2.8	6.4	8.3	9.7
7	3.8	8.0	10.1	11.7
8	0.4	1.4	2.0	2.5
10	0.7	1.3	1.6	1.8
11	0.3	0.6	0.7	0.8
12	1.2	2.9	3.8	4.5

The goals of the proposed stormwater system are to maintain these peak existing flow rates for the proposed conditions, and to design drainage structures to adequately convey the design storm. According to the State of Maine *Urban and Arterial Highway Design Guide* (2005), closed drainage systems associated with freeways are to be designed to convey the 10-year return period event.

Interchange Proposed Conditions

To the maximum extent practicable, the post-development hydrology at the site will mimic the existing hydrology. The goal is to use the existing closed pipe system that conveys stormwater through the site, ultimately toward the Royal River. With the addition of impervious surface, post-construction stormwater flows will exceed pre-construction stormwater flows. Therefore, two detention basins at the I-295 NB/NB Ramps infield area have been included in the proposed design to reduce post-construction peak flows to pre-construction peak flows.

Proposed Drainage System

Northbound Off Ramp Approximate Sta. 100+00 to 112+50:

The proposed work includes widening I-295 to adjust the deceleration lane south of the Route 1 overpass. To accommodate the widening in this area, the existing drainage ditch along I-295 Northbound will be relocated further south. This ditch will be routed to the existing 24-inch RCP traversing the highway as in the existing condition. The existing conveyance pipe in this area will need to be extended to the relocated ditch, which will also require the removal of the existing headwall in this area.

Northbound Off Ramp Approximate Sta. 112+50 to 128+00 and I-295 Sta. 456+00 to 468+50:

In addition to modifications to the Northbound Off Ramp, a new Northbound On Ramp is proposed. The proposed modifications to the Northbound Off Ramp and new On Ramp are mostly within the aerial footprint of the existing Off Ramp. Runoff from the modified Off Ramp will travel in a ditch along the inside of the loop to a new 24" culvert

at Sta. 116+05+/-. Flow from this culvert will be directed to a detention basin before discharging to the existing 24" CMP under I-295 at Sta. 459+50. The existing pipe crosses under the highway to the southbound exit ramp triangle. Runoff from the new Northbound On Ramp will predominantly be conveyed in a ditch along the outside/east side of the ramp and a ditch on the west side of the On Ramp toward a low point near the ramp junction. Stormwater at this low point will be conveyed through a new 24" culvert under the On Ramp at Sta. 213+70+/- to a second detention basin in the infield created by the modified Off Ramp and the new On Ramp. The runoff then discharges to the existing 24" CMP under I-295 at Sta. 462+50.

Southbound Off Ramp Approximate Sta. 301+00 to 316+00 and Route 1 Northbound 463+00 to 466+00:

The stormwater runoff in this area will continue to flow to the north into the open space near the powerline clear cut area. A portion of the I-295 Southbound widening for the deceleration lane modifications and some of the re-aligned ramp work will encroach into the existing drainage ditch on the side of the highway. In this area the ditch will be relocated further from the existing roadway to accommodate the modifications but will allow runoff to follow the same general pattern.

I-295 Southbound On Ramp Sta. 499+00 to 523+50:

The existing Southbound On Ramp for I-295 is being abandoned and replaced with a Park and Ride facility. The proposed drainage system in this area will incorporate both the proposed Park and Ride facility and the new Southbound On Ramp and will utilize the existing forested area for stormwater management of runoff prior to discharge to the existing drainage ditch along the northwest side of I-295 southbound. A more detailed description of the drainage system associated with the Park and Ride facility can be found in a separate report.

Route 1 Northbound Sta. 466+00 to 473+00:

This section of Route 1 Northbound is proposed to be widened, however the existing ditch and drainage patterns will be maintained.

Route 1 Southbound south of I-295 overpass Sta. 442+00 to 458+00:

Runoff from Route 1 Southbound will continue to be conveyed to the wooded area to the west of Route 1. Existing drainage patterns will be maintained.

I-295 Sta. 468+50 to 479+50:

In this area, similar to the area southeast of the Route 1 overpass, the proposed work for the Northbound On Ramp requires that the existing ditch be relocated to the southeast, further from the existing road. Stormwater runoff will be directed to the relocated ditch and transferred across the highway as under existing conditions. A slight change to the high point in the ditch along the northbound highway is proposed. Instead of the ditch high point being at I-295 Sta. 468+50, the proposed ditch will have a high point at I-295 Sta. 468+00.

Proposed Land Use

Generally the proposed land use remains the same as the existing land use except for an increase in impervious surface to accommodate the interchange modifications. In addition to an increase in impervious surface, some of the existing wooded area and open grass channels will be regraded to incorporate proposed conveyance, detention and water quality stormwater management systems, where practicable, to support the modified roadway layout.

Soils

Underlying soils will not be changed from existing conditions. Of note is the large percentage of the site that is underlain with hydrologic soil group C/D. These soils are poorly draining and are not efficient for groundwater recharge. Creating impervious surface over these soils is less detrimental than over well draining soils.

Proposed Drainage Catchment Delineations

The eight drainage catchments delineated for existing conditions were modified based on the proposed grading of the site. Figure 3 shows the proposed drainage catchments. The proposed drainage catchments are similar to the existing drainage catchments. One area where the proposed is different from the existing is along the east side of the proposed northbound on-ramp, existing catchment area 6. This area has been combined with catchment #3 in the proposed condition. In addition, catchment #4 has been included for the proposed condition only. It encompasses multiple areas within the vicinity of the Park and Ride Facility and has been included here to size culverts at the entrances of the SB On Ramp and Park and Ride, as well as the culvert under the SB On Ramp Sta. 515+00. Refer to the Park and Ride Facility drainage report under separate cover for detailed information in this area. Table 2.10 provides a summary of the proposed catchment areas.

Table 2.10 - Proposed Delineated Catchment Area Summary

Catchment	Total Area (acres)	Impervious Area (acres)	Percent Impervious (%)
1	13.20	3.03	23.0
2	6.86	1.13	16.5
3	13.50	1.23	9.1
4	4.41	0.74	16.8
7	6.57	2.11	32.2
8	1.38	0.18	13.4
10	0.34	0.16	47.7
11	0.16	0.04	26.0
12	1.09	0.42	38.6
Total	43.10*	8.30*	19.3*

* Total values do not include catchment #4

Proposed Hydrology

As with the existing hydrology, stormwater peak flows for the proposed condition were calculated using HydroCAD. The proposed peak flows for the 2-, 10-, and 25-year storm frequencies having a 24-hour duration were compared with the peak flows for the same storms under existing conditions. Where the peak flows for proposed conditions exceeded the peak flows from existing conditions, detention basins were added to reduce the peak flows to existing flow rates. Table 2.11 summarizes the peak flow rates for the existing drainage catchments and the proposed drainage catchments including the proposed detention basins.

Stormwater Management Approach

Overall Approach

The general approach to stormwater management following construction is to use the existing drainage features and pipe networks as much as possible. In addition to using the existing drainage network, stormwater best management practices (BMPs) will be incorporated in the design to the extent practicable.

Table 2.11 - Existing/Proposed Peak Runoff Rates

	Peak Flows (cfs)							
	2-Year		10-Year		25-Year		50-Year	
Catchment	**Exist.**	**Prop.**	**Exist.**	**Prop.**	**Exist.**	**Prop.**	**Exist.**	**Prop.**
1	9.1	9.1*	20.4	18.9*	26.0	22.7*	30.3	23.8*
2	7.2	---	15.8	---	20.1	---	23.4	---
3	7.9	---	19.1	---	24.9	---	29.4	---
2&3**	---	11.9*	---	21.7*	---	29.0*	---	34.0*
6	2.8	---	6.4	---	8.3	---	9.7	---
7	3.8	4.2	8.0	8.7	10.1	10.9	11.7	12.6
8	0.4	0.4	1.4	1.4	2.0	2.0	2.5	2.5
10	0.7	0.7	1.3	1.3	1.6	1.6	1.8	1.8
11	0.3	0.3	0.6	0.6	0.7	0.7	0.8	0.8
12	1.2	1.2	2.9	2.9	3.8	3.8	4.5	4.5

* Peak flows out of detention ponds/into existing culverts.
** Catchments 2 & 3 have been combined for the proposed condition.

Preliminary areas for stormwater detention include:

- Catchment 1 - Widening of the conveyance channel along I-295 Northbound between stations 109+00 and 112+50; this provides additional storage for increased flows in excess of existing flows.

- Catchment 2 – Although the area of catchment 2 is reduced from existing conditions to proposed, and the flow rates are lower, the impervious area is increased, so a small detention area is being provided in the open triangle that will be created between the I-295 Northbound Off-Ramp and the I-295 Northbound On-Ramp.

- Catchment 3 – A detention area is being provided in the open triangle that will be created between the I-295 Northbound Off-Ramp and the I-295 Northbound On-Ramp.

For the closed pipe system, a perforated carrying pipe will be used for drainage pipes that run longitudinally from catch basin to catch basin.

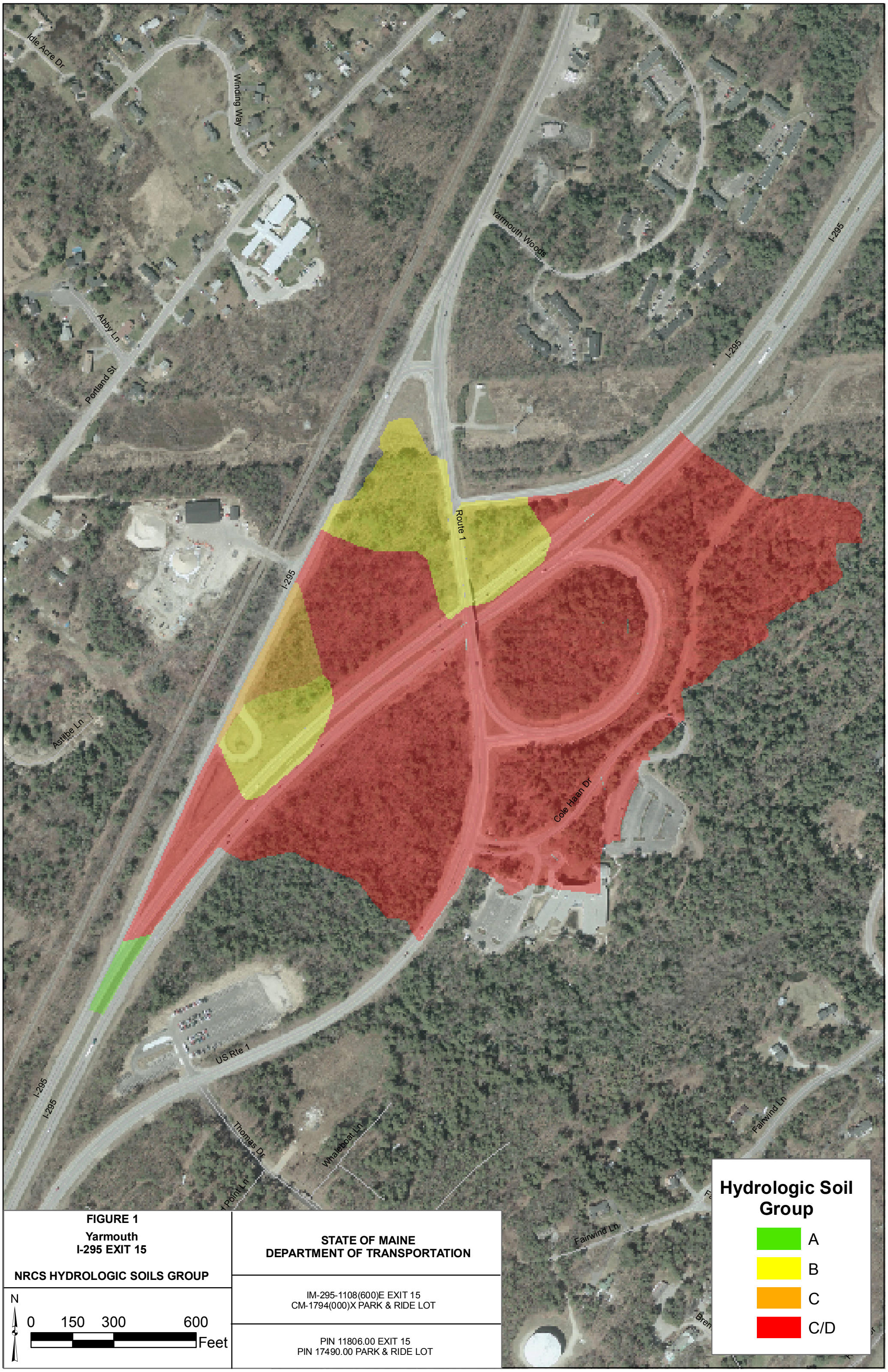


FIGURE 1

Yarmouth
I-295 EXIT 15

NRCS HYDROLOGIC SOILS GROUP

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

IM-295-1108(600)E EXIT 15
CM-1794(000)X PARK & RIDE LOT

PIN 11806.00 EXIT 15
PIN 17490.00 PARK & RIDE LOT

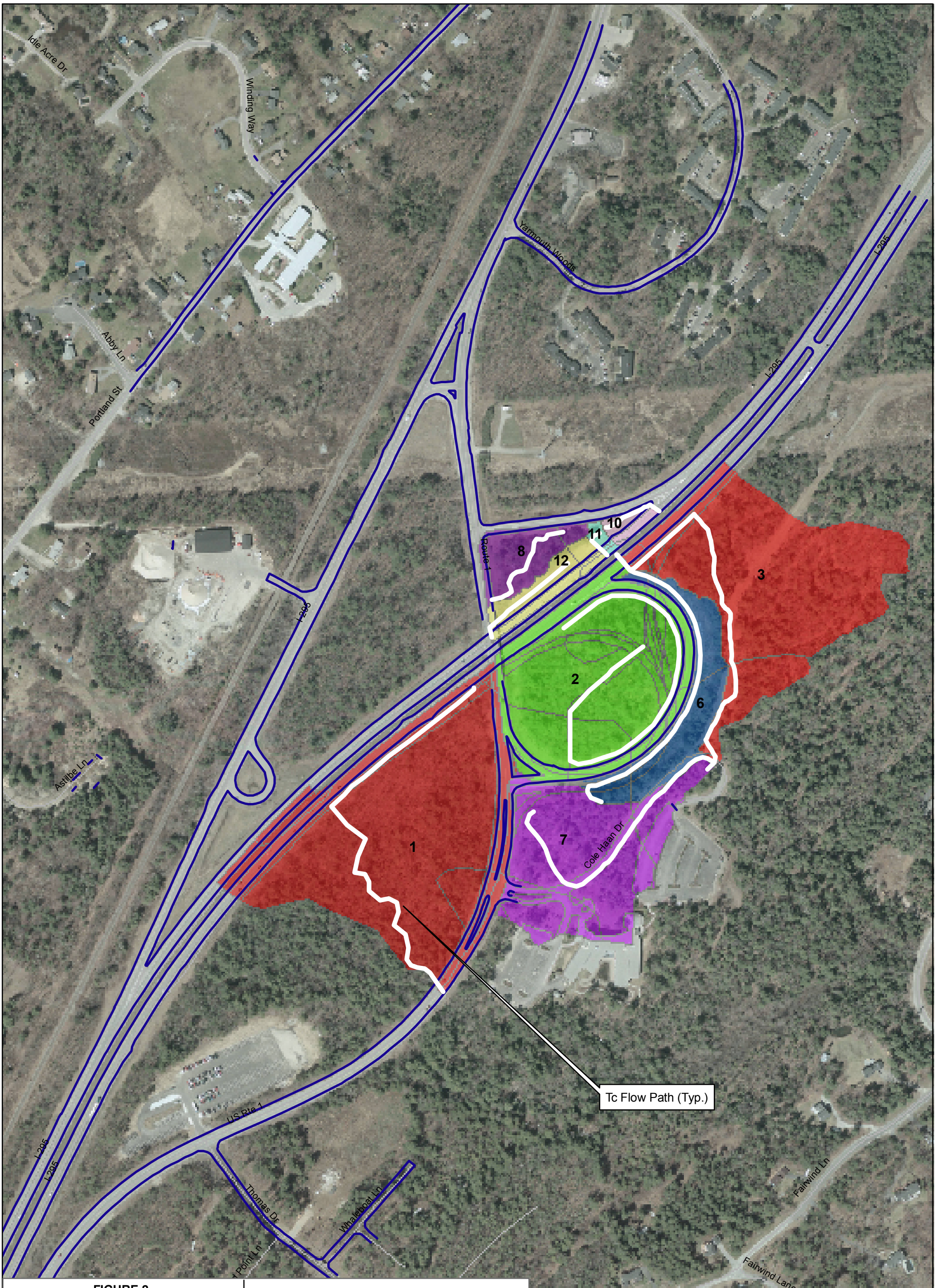


FIGURE 2

Yarmouth
I-295 EXIT 15

EXISTING DRAINAGE DELINEATIONS

N

0 150 300 600 Feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

IM-295-1108(600)E EXIT 15
CM-1794(000)X PARK & RIDE LOT

PIN 11806.00 EXIT 15
PIN 17490.00 PARK & RIDE LOT

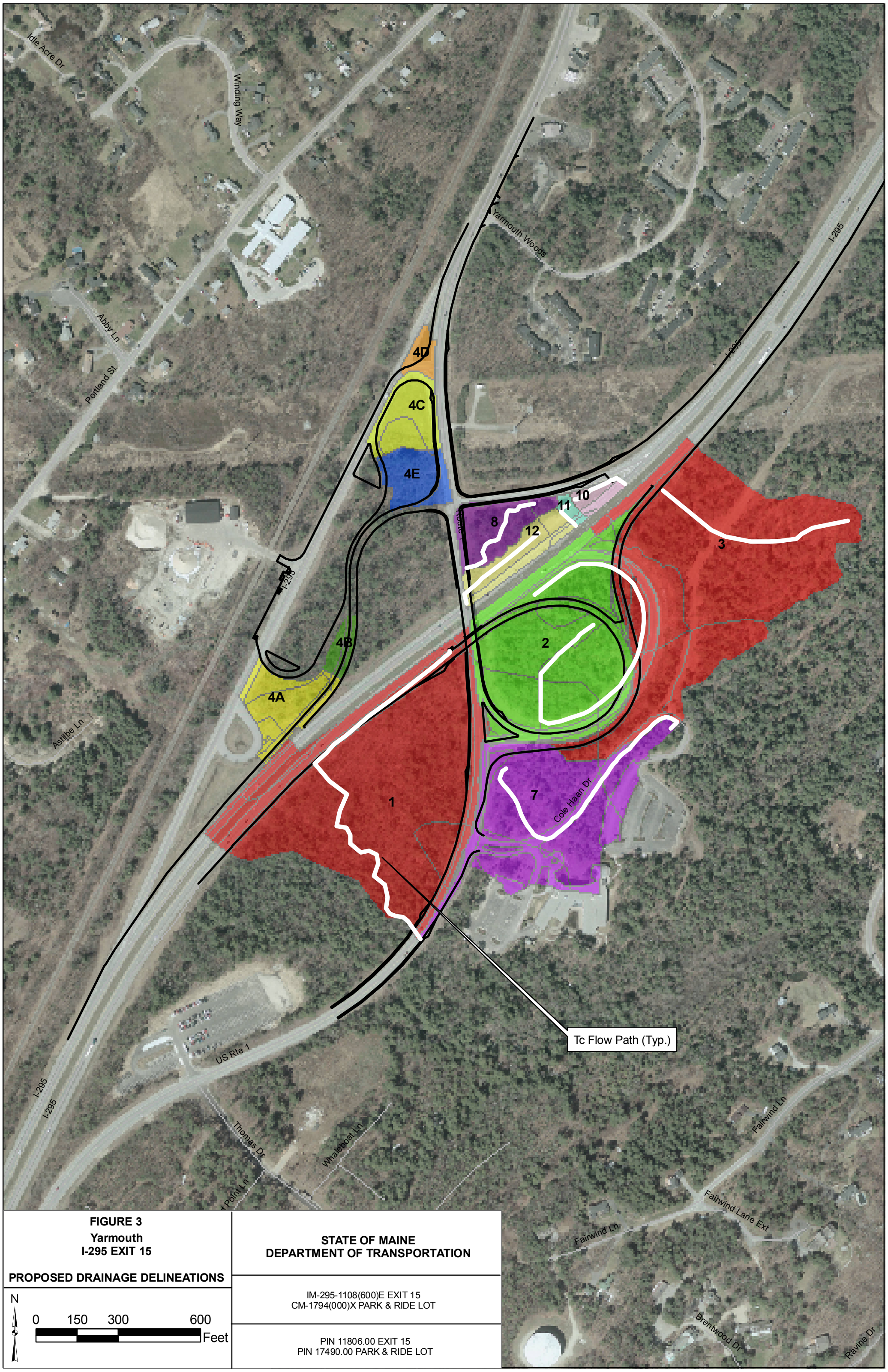


FIGURE 3
Yarmouth
I-295 EXIT 15

PROPOSED DRAINAGE DELINEATIONS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

IM-295-1108(600)E EXIT 15
CM-1794(000)X PARK & RIDE LOT

PIN 11806.00 EXIT 15
PIN 17490.00 PARK & RIDE LOT

Subcat Reach Pond Link

Routing Diagram for Yarmouth I-295 Exit 15_Exist Condition
Prepared by Fay, Spofford & Thorndike, Printed 11/13/2012
HydroCAD® 10.00 s/n 01048 © 2011 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.102	55	Woods, Good, HSG B (8, 12)
0.666	61	>75% Grass cover, Good, HSG B (1, 8, 12)
28.428	74	Woods, Good, HSG C/D (1, 2, 3, 6, 7, 8, 10, 11, 12)
6.065	77	>75% Grass cover, Good, HSG C/D (1, 2, 3, 6, 7, 8, 10, 11, 12)
6.815	98	Paved roads w/curbs & sewers (1, 2, 3, 6, 7, 8, 10, 11, 12)
43.075	**78**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.768	HSG B	1, 8, 12
34.493	HSG C	1, 2, 3, 6, 7, 8, 10, 11, 12
0.000	HSG D	
6.815	Other	1, 2, 3, 6, 7, 8, 10, 11, 12
43.075		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 9
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Catchment #1 Runoff Area=587,526 sf 16.77% Impervious Runoff Depth=1.13"
Flow Length=1,200' Tc=35.3 min CN=78 Runoff=9.08 cfs 1.269 af

Subcatchment 2: Catchment #2 Runoff Area=364,991 sf 20.78% Impervious Runoff Depth=1.19"
Flow Length=1,662' Tc=23.2 min CN=79 Runoff=7.20 cfs 0.830 af

Subcatchment 3: Catchment #3 Runoff Area=407,153 sf 2.69% Impervious Runoff Depth=0.96"
Flow Length=1,312' Tc=13.1 min CN=75 Runoff=7.86 cfs 0.748 af

Subcatchment 6: Catchment #6 Runoff Area=115,654 sf 6.45% Impervious Runoff Depth=1.07"
Flow Length=1,210' Tc=10.0 min CN=77 Runoff=2.80 cfs 0.237 af

Subcatchment 7: Catchment #7 Runoff Area=272,156 sf 25.27% Impervious Runoff Depth=1.31"
Flow Length=1,020' Tc=57.6 min CN=81 Runoff=3.81 cfs 0.684 af

Subcatchment 8: Catchment #8 Runoff Area=59,935 sf 13.51% Impervious Runoff Depth=0.47"
Flow Length=402' Tc=18.6 min CN=64 Runoff=0.37 cfs 0.054 af

Subcatchment 10: Catchment #10 Runoff Area=14,640 sf 48.29% Impervious Runoff Depth=1.74"
Tc=5.0 min CN=87 Runoff=0.71 cfs 0.049 af

Subcatchment 11: Catchment #11 Runoff Area=7,015 sf 27.24% Impervious Runoff Depth=1.38"
Tc=5.0 min CN=82 Runoff=0.27 cfs 0.019 af

Subcatchment 12: Catchment #12 Runoff Area=47,293 sf 38.59% Impervious Runoff Depth=0.96"
Tc=5.0 min CN=75 Runoff=1.20 cfs 0.087 af

Pond 1P: (new Pond) Inflow=9.08 cfs 1.269 af
Primary=9.08 cfs 1.269 af

Pond 2P: (new Pond) Inflow=7.20 cfs 0.830 af
Primary=7.20 cfs 0.830 af

Pond 3P: (new Pond) Inflow=7.86 cfs 0.748 af
Primary=7.86 cfs 0.748 af

Pond 6P: (new Pond) Inflow=2.80 cfs 0.237 af
Primary=2.80 cfs 0.237 af

Pond 7P: (new Pond) Inflow=3.81 cfs 0.684 af
Primary=3.81 cfs 0.684 af

Pond 8P: (new Pond) Inflow=0.37 cfs 0.054 af
Primary=0.37 cfs 0.054 af

Pond 10P: (new Pond) Inflow=0.71 cfs 0.049 af
Primary=0.71 cfs 0.049 af

Pond 11P: (new Pond) Inflow=0.27 cfs 0.019 af
Primary=0.27 cfs 0.019 af

Pond 12P: (new Pond) Inflow=1.20 cfs 0.087 af
Primary=1.20 cfs 0.087 af

Total Runoff Area = 43.075 ac Runoff Volume = 3.976 af Average Runoff Depth = 1.11"
84.18% Pervious = 36.261 ac 15.82% Impervious = 6.815 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 9
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Catchment #1 Runoff Area=587,526 sf 16.77% Impervious Runoff Depth=2.46"
Flow Length=1,200' Tc=35.3 min CN=78 Runoff=20.36 cfs 2.764 af

Subcatchment 2: Catchment #2 Runoff Area=364,991 sf 20.78% Impervious Runoff Depth=2.55"
Flow Length=1,662' Tc=23.2 min CN=79 Runoff=15.81 cfs 1.777 af

Subcatchment 3: Catchment #3 Runoff Area=407,153 sf 2.69% Impervious Runoff Depth=2.21"
Flow Length=1,312' Tc=13.1 min CN=75 Runoff=19.14 cfs 1.720 af

Subcatchment 6: Catchment #6 Runoff Area=115,654 sf 6.45% Impervious Runoff Depth=2.37"
Flow Length=1,210' Tc=10.0 min CN=77 Runoff=6.44 cfs 0.525 af

Subcatchment 7: Catchment #7 Runoff Area=272,156 sf 25.27% Impervious Runoff Depth=2.72"
Flow Length=1,020' Tc=57.6 min CN=81 Runoff=8.02 cfs 1.417 af

Subcatchment 8: Catchment #8 Runoff Area=59,935 sf 13.51% Impervious Runoff Depth=1.39"
Flow Length=402' Tc=18.6 min CN=64 Runoff=1.43 cfs 0.159 af

Subcatchment 10: Catchment #10 Runoff Area=14,640 sf 48.29% Impervious Runoff Depth=3.29"
Tc=5.0 min CN=87 Runoff=1.32 cfs 0.092 af

Subcatchment 11: Catchment #11 Runoff Area=7,015 sf 27.24% Impervious Runoff Depth=2.81"
Tc=5.0 min CN=82 Runoff=0.55 cfs 0.038 af

Subcatchment 12: Catchment #12 Runoff Area=47,293 sf 38.59% Impervious Runoff Depth=2.21"
Tc=5.0 min CN=75 Runoff=2.90 cfs 0.200 af

Pond 1P: (new Pond) Inflow=20.36 cfs 2.764 af
Primary=20.36 cfs 2.764 af

Pond 2P: (new Pond) Inflow=15.81 cfs 1.777 af
Primary=15.81 cfs 1.777 af

Pond 3P: (new Pond) Inflow=19.14 cfs 1.720 af
Primary=19.14 cfs 1.720 af

Pond 6P: (new Pond) Inflow=6.44 cfs 0.525 af
Primary=6.44 cfs 0.525 af

Pond 7P: (new Pond) Inflow=8.02 cfs 1.417 af
Primary=8.02 cfs 1.417 af

Pond 8P: (new Pond) Inflow=1.43 cfs 0.159 af
Primary=1.43 cfs 0.159 af

Pond 10P: (new Pond) Inflow=1.32 cfs 0.092 af
Primary=1.32 cfs 0.092 af

Pond 11P: (new Pond)

Inflow=0.55 cfs 0.038 af
Primary=0.55 cfs 0.038 af

Pond 12P: (new Pond)

Inflow=2.90 cfs 0.200 af
Primary=2.90 cfs 0.200 af

Total Runoff Area = 43.075 ac Runoff Volume = 8.692 af Average Runoff Depth = 2.42"
84.18% Pervious = 36.261 ac 15.82% Impervious = 6.815 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 9
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Catchment #1 Runoff Area=587,526 sf 16.77% Impervious Runoff Depth=3.14"
Flow Length=1,200' Tc=35.3 min CN=78 Runoff=26.03 cfs 3.530 af

Subcatchment 2: Catchment #2 Runoff Area=364,991 sf 20.78% Impervious Runoff Depth=3.24"
Flow Length=1,662' Tc=23.2 min CN=79 Runoff=20.12 cfs 2.260 af

Subcatchment 3: Catchment #3 Runoff Area=407,153 sf 2.69% Impervious Runoff Depth=2.86"
Flow Length=1,312' Tc=13.1 min CN=75 Runoff=24.94 cfs 2.228 af

Subcatchment 6: Catchment #6 Runoff Area=115,654 sf 6.45% Impervious Runoff Depth=3.05"
Flow Length=1,210' Tc=10.0 min CN=77 Runoff=8.29 cfs 0.674 af

Subcatchment 7: Catchment #7 Runoff Area=272,156 sf 25.27% Impervious Runoff Depth=3.43"
Flow Length=1,020' Tc=57.6 min CN=81 Runoff=10.12 cfs 1.786 af

Subcatchment 8: Catchment #8 Runoff Area=59,935 sf 13.51% Impervious Runoff Depth=1.91"
Flow Length=402' Tc=18.6 min CN=64 Runoff=2.04 cfs 0.219 af

Subcatchment 10: Catchment #10 Runoff Area=14,640 sf 48.29% Impervious Runoff Depth=4.04"
Tc=5.0 min CN=87 Runoff=1.61 cfs 0.113 af

Subcatchment 11: Catchment #11 Runoff Area=7,015 sf 27.24% Impervious Runoff Depth=3.53"
Tc=5.0 min CN=82 Runoff=0.69 cfs 0.047 af

Subcatchment 12: Catchment #12 Runoff Area=47,293 sf 38.59% Impervious Runoff Depth=2.86"
Tc=5.0 min CN=75 Runoff=3.77 cfs 0.259 af

Pond 1P: (new Pond) Inflow=26.03 cfs 3.530 af
Primary=26.03 cfs 3.530 af

Pond 2P: (new Pond) Inflow=20.12 cfs 2.260 af
Primary=20.12 cfs 2.260 af

Pond 3P: (new Pond) Inflow=24.94 cfs 2.228 af
Primary=24.94 cfs 2.228 af

Pond 6P: (new Pond) Inflow=8.29 cfs 0.674 af
Primary=8.29 cfs 0.674 af

Pond 7P: (new Pond) Inflow=10.12 cfs 1.786 af
Primary=10.12 cfs 1.786 af

Pond 8P: (new Pond) Inflow=2.04 cfs 0.219 af
Primary=2.04 cfs 0.219 af

Pond 10P: (new Pond) Inflow=1.61 cfs 0.113 af
Primary=1.61 cfs 0.113 af

Pond 11P: (new Pond) Inflow=0.69 cfs 0.047 af
Primary=0.69 cfs 0.047 af

Pond 12P: (new Pond) Inflow=3.77 cfs 0.259 af
Primary=3.77 cfs 0.259 af

Total Runoff Area = 43.075 ac Runoff Volume = 11.118 af Average Runoff Depth = 3.10"
84.18% Pervious = 36.261 ac 15.82% Impervious = 6.815 ac

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points x 9
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Catchment #1 Runoff Area=587,526 sf 16.77% Impervious Runoff Depth=3.67"
Flow Length=1,200' Tc=35.3 min CN=78 Runoff=30.34 cfs 4.122 af

Subcatchment 2: Catchment #2 Runoff Area=364,991 sf 20.78% Impervious Runoff Depth=3.77"
Flow Length=1,662' Tc=23.2 min CN=79 Runoff=23.40 cfs 2.632 af

Subcatchment 3: Catchment #3 Runoff Area=407,153 sf 2.69% Impervious Runoff Depth=3.37"
Flow Length=1,312' Tc=13.1 min CN=75 Runoff=29.41 cfs 2.623 af

Subcatchment 6: Catchment #6 Runoff Area=115,654 sf 6.45% Impervious Runoff Depth=3.57"
Flow Length=1,210' Tc=10.0 min CN=77 Runoff=9.70 cfs 0.789 af

Subcatchment 7: Catchment #7 Runoff Area=272,156 sf 25.27% Impervious Runoff Depth=3.97"
Flow Length=1,020' Tc=57.6 min CN=81 Runoff=11.71 cfs 2.070 af

Subcatchment 8: Catchment #8 Runoff Area=59,935 sf 13.51% Impervious Runoff Depth=2.33"
Flow Length=402' Tc=18.6 min CN=64 Runoff=2.53 cfs 0.268 af

Subcatchment 10: Catchment #10 Runoff Area=14,640 sf 48.29% Impervious Runoff Depth=4.61"
Tc=5.0 min CN=87 Runoff=1.83 cfs 0.129 af

Subcatchment 11: Catchment #11 Runoff Area=7,015 sf 27.24% Impervious Runoff Depth=4.08"
Tc=5.0 min CN=82 Runoff=0.79 cfs 0.055 af

Subcatchment 12: Catchment #12 Runoff Area=47,293 sf 38.59% Impervious Runoff Depth=3.37"
Tc=5.0 min CN=75 Runoff=4.45 cfs 0.305 af

Pond 1P: (new Pond) Inflow=30.34 cfs 4.122 af
Primary=30.34 cfs 4.122 af

Pond 2P: (new Pond) Inflow=23.40 cfs 2.632 af
Primary=23.40 cfs 2.632 af

Pond 3P: (new Pond) Inflow=29.41 cfs 2.623 af
Primary=29.41 cfs 2.623 af

Pond 6P: (new Pond) Inflow=9.70 cfs 0.789 af
Primary=9.70 cfs 0.789 af

Pond 7P: (new Pond) Inflow=11.71 cfs 2.070 af
Primary=11.71 cfs 2.070 af

Pond 8P: (new Pond) Inflow=2.53 cfs 0.268 af
Primary=2.53 cfs 0.268 af

Pond 10P: (new Pond) Inflow=1.83 cfs 0.129 af
Primary=1.83 cfs 0.129 af

Pond 11P: (new Pond) Inflow=0.79 cfs 0.055 af
Primary=0.79 cfs 0.055 af

Pond 12P: (new Pond) Inflow=4.45 cfs 0.305 af
Primary=4.45 cfs 0.305 af

Total Runoff Area = 43.075 ac Runoff Volume = 12.992 af Average Runoff Depth = 3.62"
84.18% Pervious = 36.261 ac 15.82% Impervious = 6.815 ac

Summary for Subcatchment 1: Catchment #1

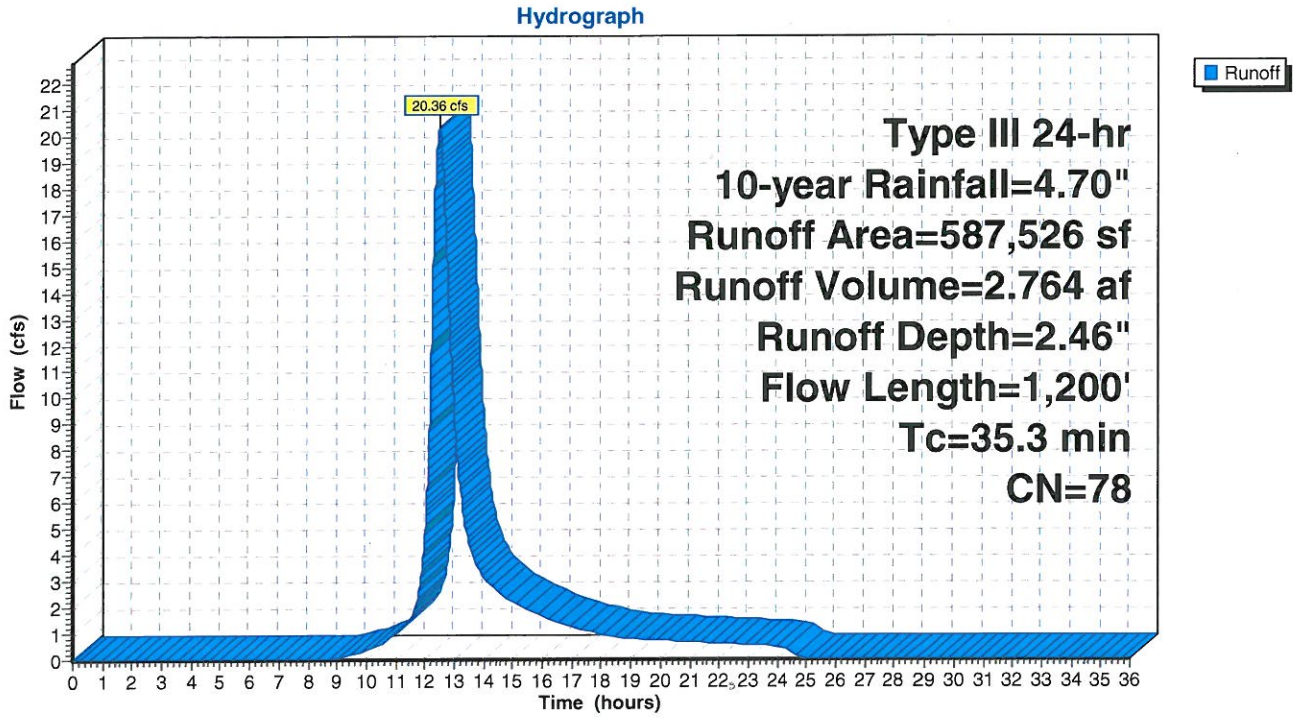
Runoff = 20.36 cfs @ 12.51 hrs, Volume= 2.764 af, Depth= 2.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.70"

	Area (sf)	CN	Description
	8,920	98	Paved roads w/curbs & sewers
	7,806	61	>75% Grass cover, Good, HSG B
	89,599	98	Paved roads w/curbs & sewers
*	49,472	77	>75% Grass cover, Good, HSG C/D
*	431,729	74	Woods, Good, HSG C/D
	587,526	78	Weighted Average
	489,007		83.23% Pervious Area
	98,519		16.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	30	0.0570	1.59		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.3	40	0.5000	0.50		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
8.3	30	0.0208	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
25.4	1,100	0.0208	0.72		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
35.3	1,200	Total			

Subcatchment 1: Catchment #1



Summary for Subcatchment 2: Catchment #2

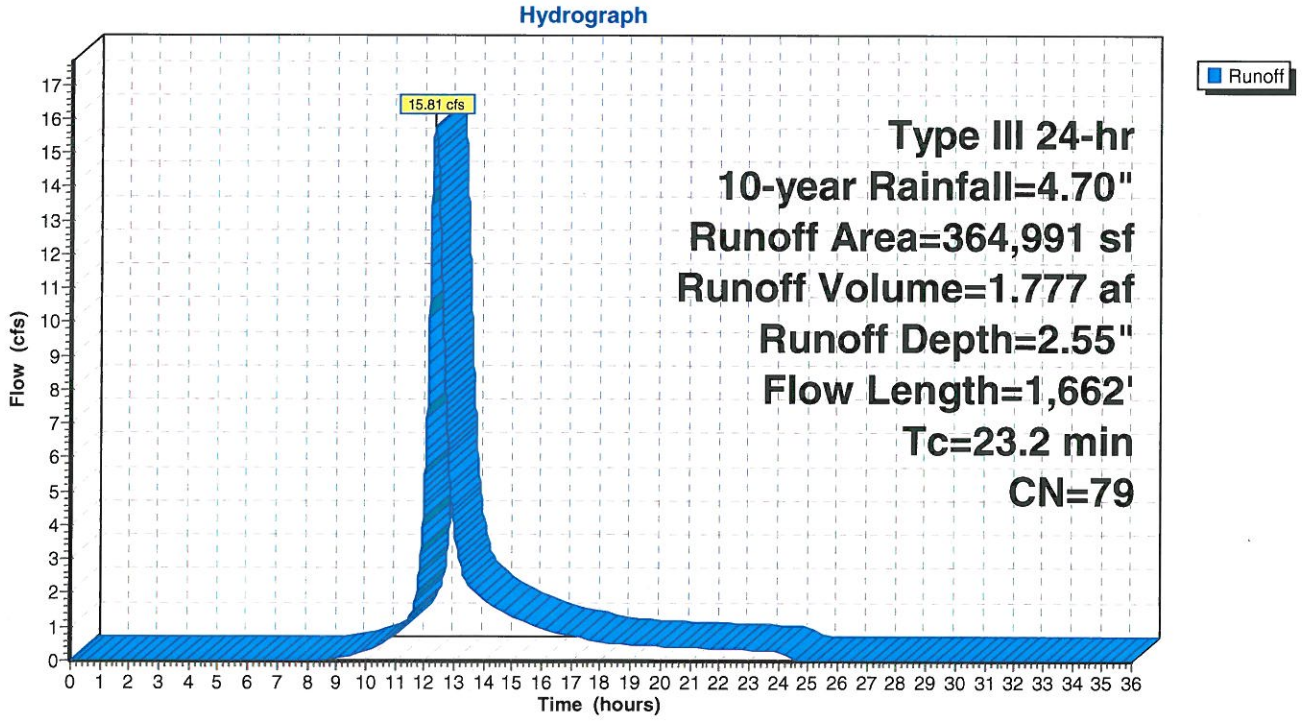
Runoff = 15.81 cfs @ 12.32 hrs, Volume= 1.777 af, Depth= 2.55"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.70"

	Area (sf)	CN	Description
	3,061	98	Paved roads w/curbs & sewers
	72,781	98	Paved roads w/curbs & sewers
*	45,552	77	>75% Grass cover, Good, HSG C/D
*	243,597	74	Woods, Good, HSG C/D
	364,991	79	Weighted Average
	289,149		79.22% Pervious Area
	75,842		20.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	100	0.0900	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
8.9	442	0.0271	0.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.1	1,120	0.0171	9.08	333.75	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=3.50' Z= 3.0 '/' Top.W=21.00' n= 0.030 Short grass
23.2	1,662	Total			

Subcatchment 2: Catchment #2



Summary for Subcatchment 3: Catchment #3

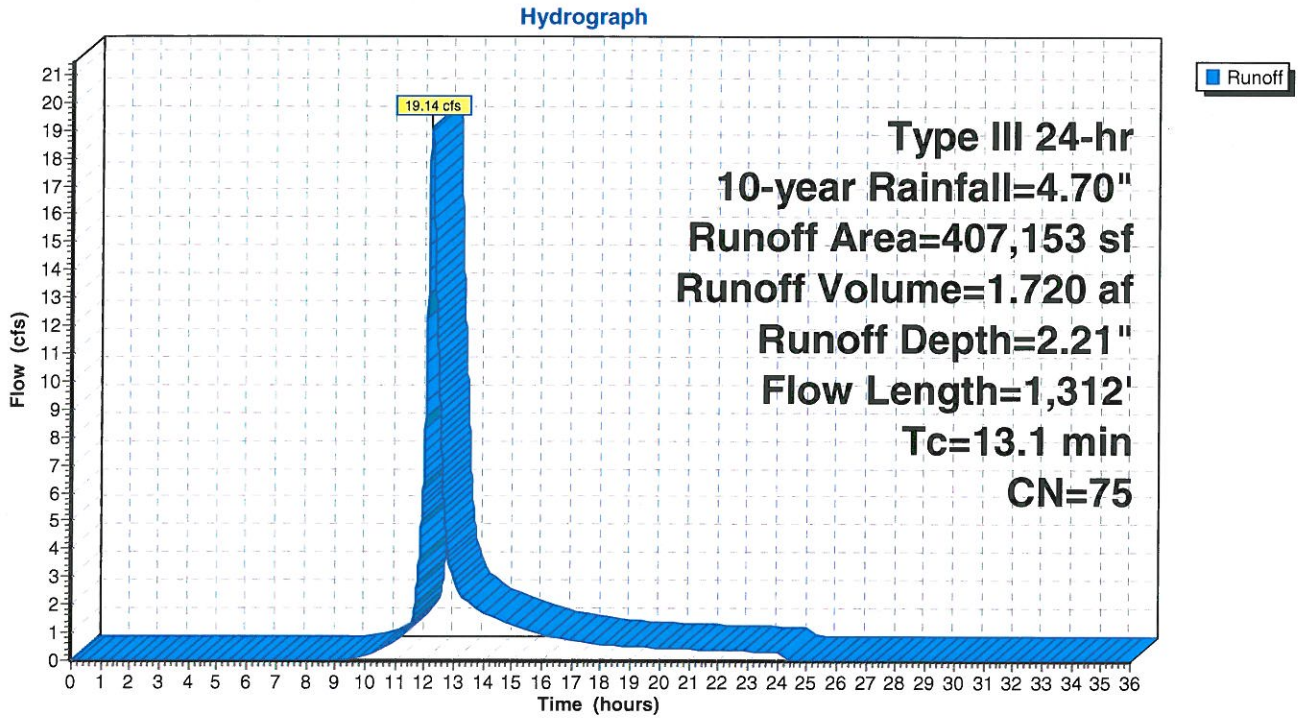
Runoff = 19.14 cfs @ 12.18 hrs, Volume= 1.720 af, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.70"

	Area (sf)	CN	Description
	10,937	98	Paved roads w/curbs & sewers
*	37,069	77	>75% Grass cover, Good, HSG C/D
*	359,147	74	Woods, Good, HSG C/D
	407,153	75	Weighted Average
	396,216		97.31% Pervious Area
	10,937		2.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0450	1.84		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
11.4	847	0.0614	1.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	277	0.0045	7.38	1,048.44	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=7.00' Z= 2.9 '/' Top.W=40.60' n= 0.030 Short grass
0.1	18	0.0051	2.21	3.90	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.025 Corrugated metal
0.1	70	0.0486	8.25	25.93	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.025 Corrugated metal
13.1	1,312	Total			

Subcatchment 3: Catchment #3



Summary for Subcatchment 6: Catchment #6

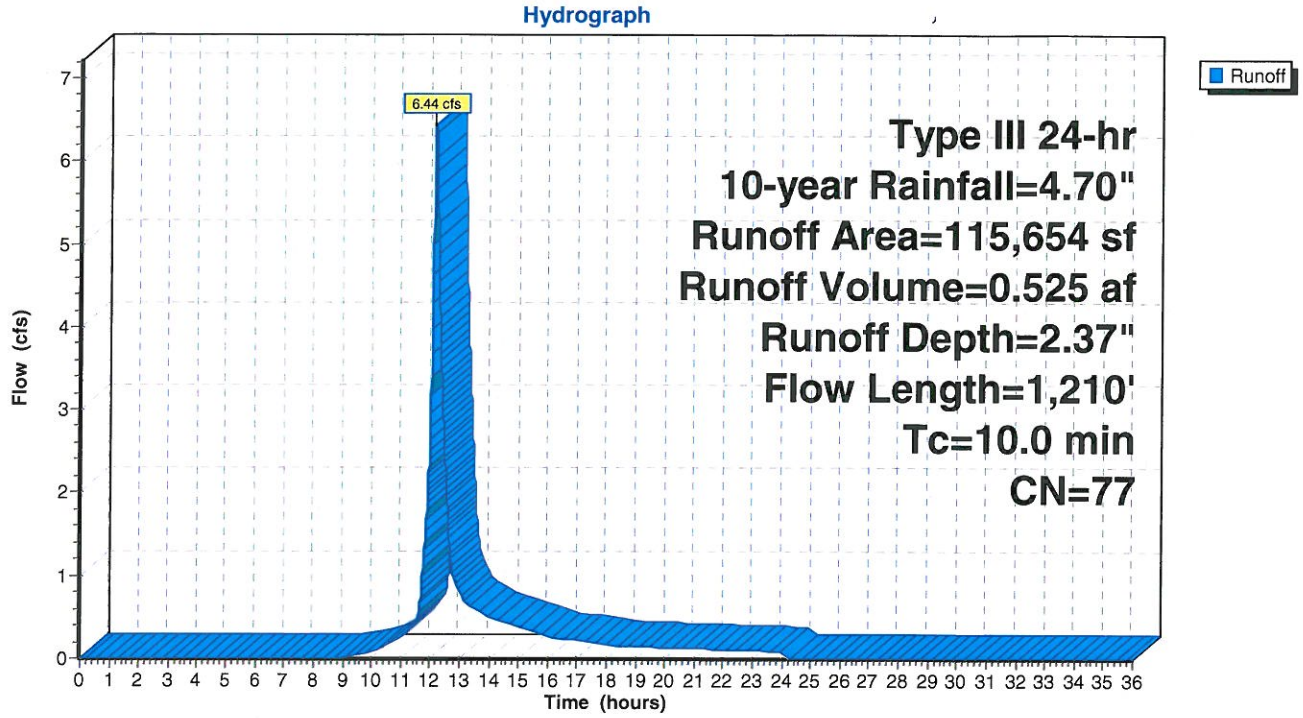
Runoff = 6.44 cfs @ 12.14 hrs, Volume= 0.525 af, Depth= 2.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.70"

	Area (sf)	CN	Description
	7,465	98	Paved roads w/curbs & sewers
*	47,179	77	>75% Grass cover, Good, HSG C/D
*	61,010	74	Woods, Good, HSG C/D
	115,654	77	Weighted Average
	108,189		93.55% Pervious Area
	7,465		6.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	82	0.1890	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
2.1	1,041	0.0130	8.31	305.97	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=4.00' Z= 3.6 & 1.0 '/' Top.W=18.40' n= 0.030 Short grass
0.1	17	0.0041	1.98	3.50	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.025 Corrugated metal
0.1	70	0.0486	8.25	25.93	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.025 Corrugated metal
10.0	1,210	Total			

Subcatchment 6: Catchment #6



Summary for Subcatchment 7: Catchment #7

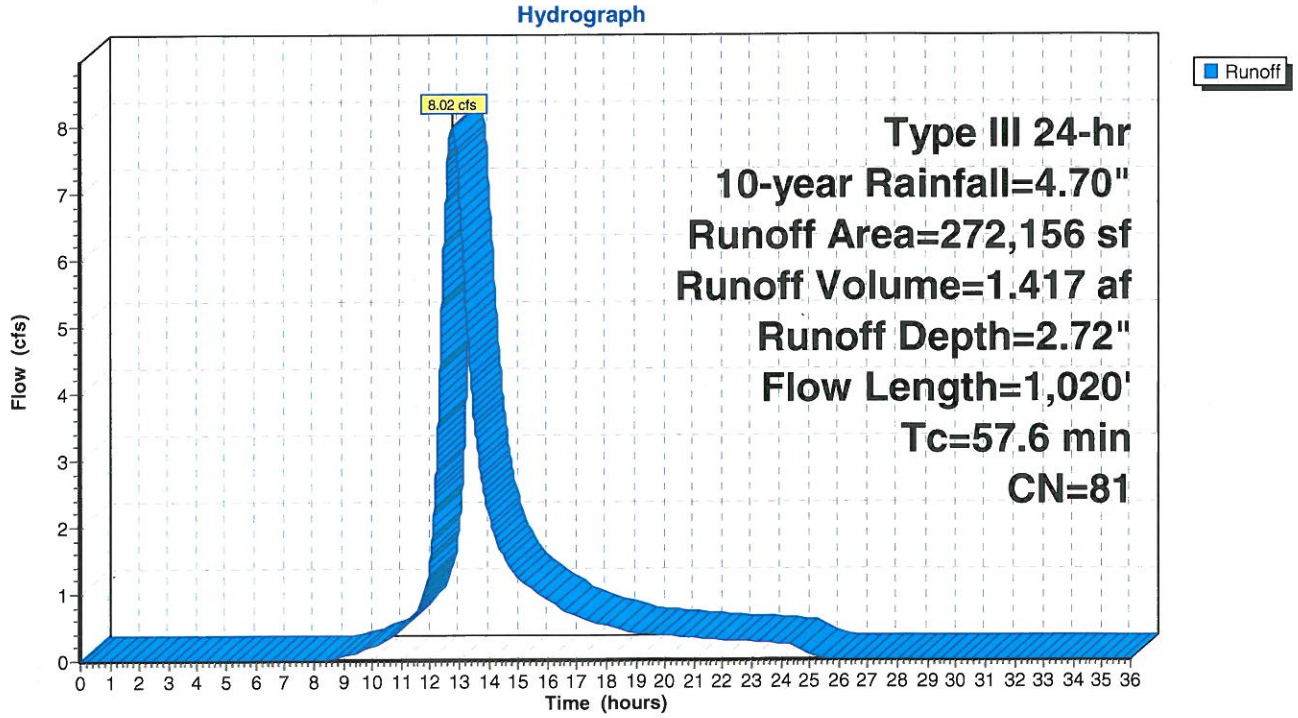
Runoff = 8.02 cfs @ 12.79 hrs, Volume= 1.417 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.70"

	Area (sf)	CN	Description
	68,761	98	Paved roads w/curbs & sewers
*	67,766	77	>75% Grass cover, Good, HSG C/D
*	135,629	74	Woods, Good, HSG C/D
	272,156	81	Weighted Average
	203,395		74.73% Pervious Area
	68,761		25.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0400	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
2.9	620	0.0130	3.51	16.48	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=1.00' Z= 4.7 '/' Top.W=9.40' n= 0.030 Short grass
37.9	300	0.0473	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
57.6	1,020	Total			

Subcatchment 7: Catchment #7



Summary for Subcatchment 8: Catchment #8

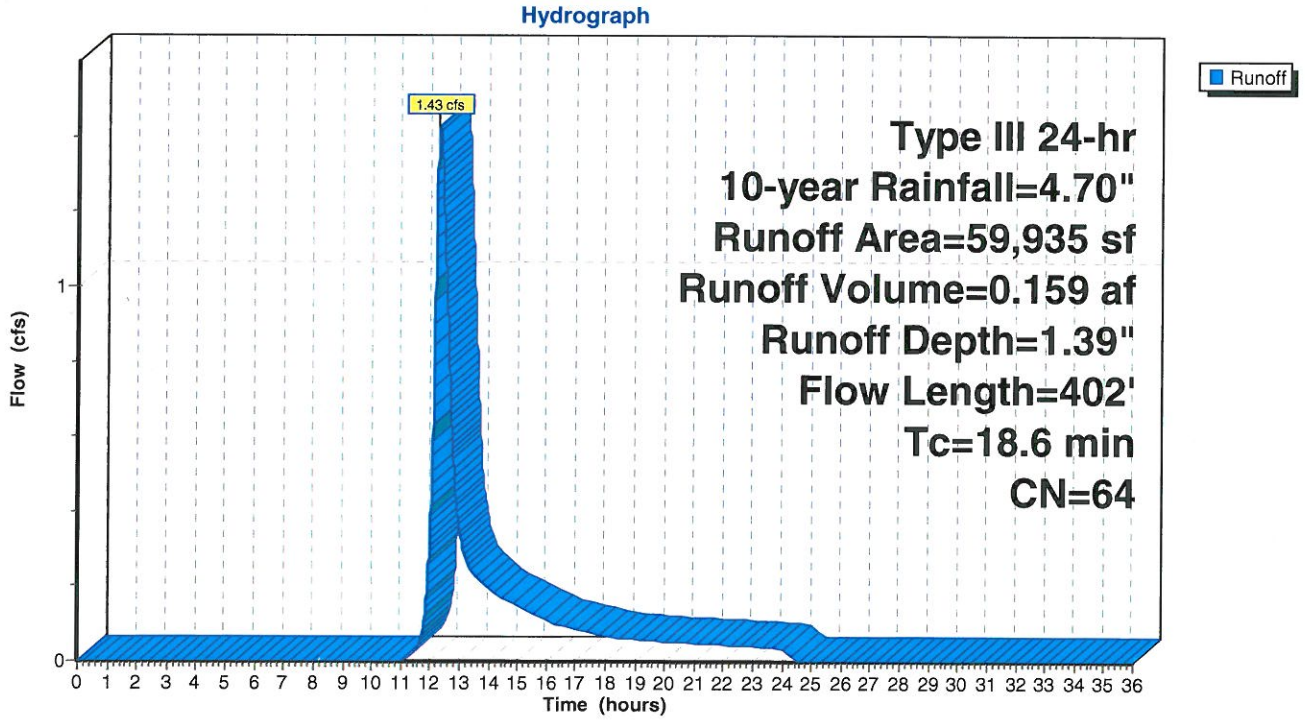
Runoff = 1.43 cfs @ 12.28 hrs, Volume= 0.159 af, Depth= 1.39"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.70"

	Area (sf)	CN	Description
	7,829	98	Paved roads w/curbs & sewers
	14,313	61	>75% Grass cover, Good, HSG B
	31,953	55	Woods, Good, HSG B
	267	98	Paved roads w/curbs & sewers
*	3,901	77	>75% Grass cover, Good, HSG C/D
*	1,672	74	Woods, Good, HSG C/D
	59,935	64	Weighted Average
	51,839		86.49% Pervious Area
	8,096		13.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1900	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
9.6	302	0.0111	0.53		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.6	402	Total			

Subcatchment 8: Catchment #8



Summary for Subcatchment 10: Catchment #10

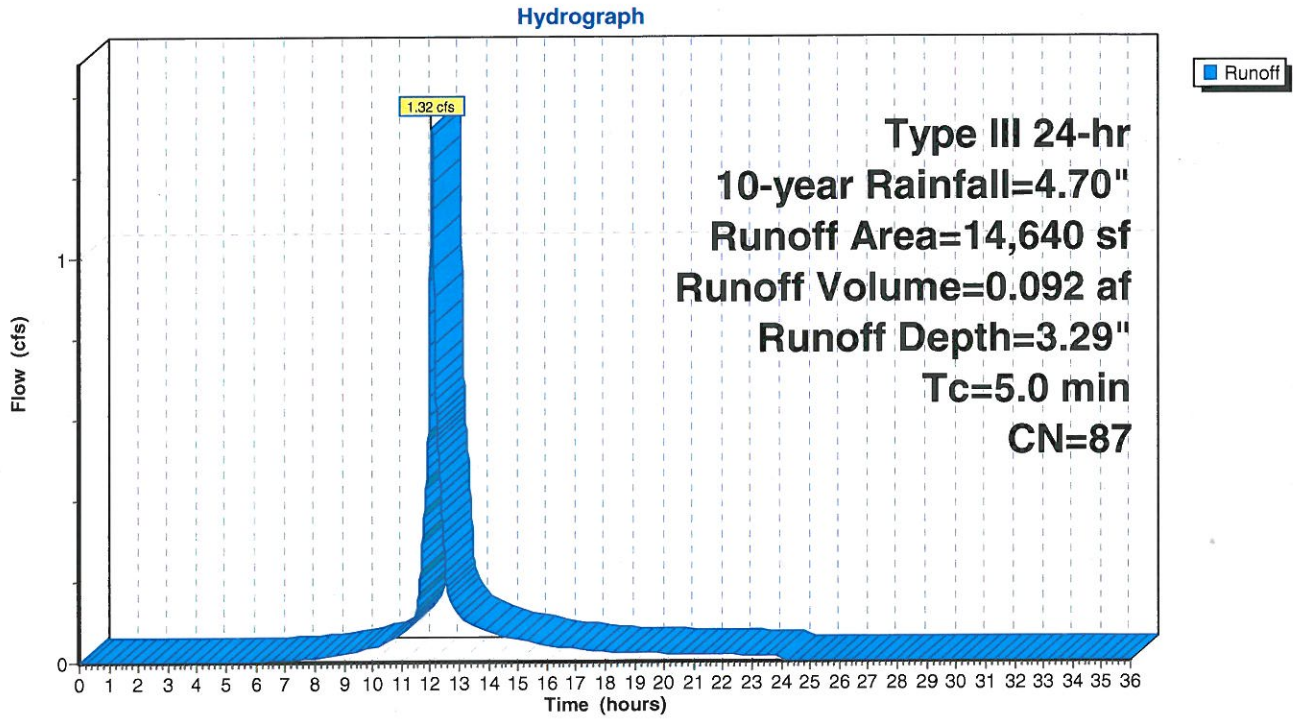
Runoff = 1.32 cfs @ 12.07 hrs, Volume= 0.092 af, Depth= 3.29"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.70"

	Area (sf)	CN	Description
	7,070	98	Paved roads w/curbs & sewers
*	5,382	77	>75% Grass cover, Good, HSG C/D
*	2,188	74	Woods, Good, HSG C/D
	14,640	87	Weighted Average
	7,570		51.71% Pervious Area
	7,070		48.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 10: Catchment #10



Summary for Subcatchment 11: Catchment #11

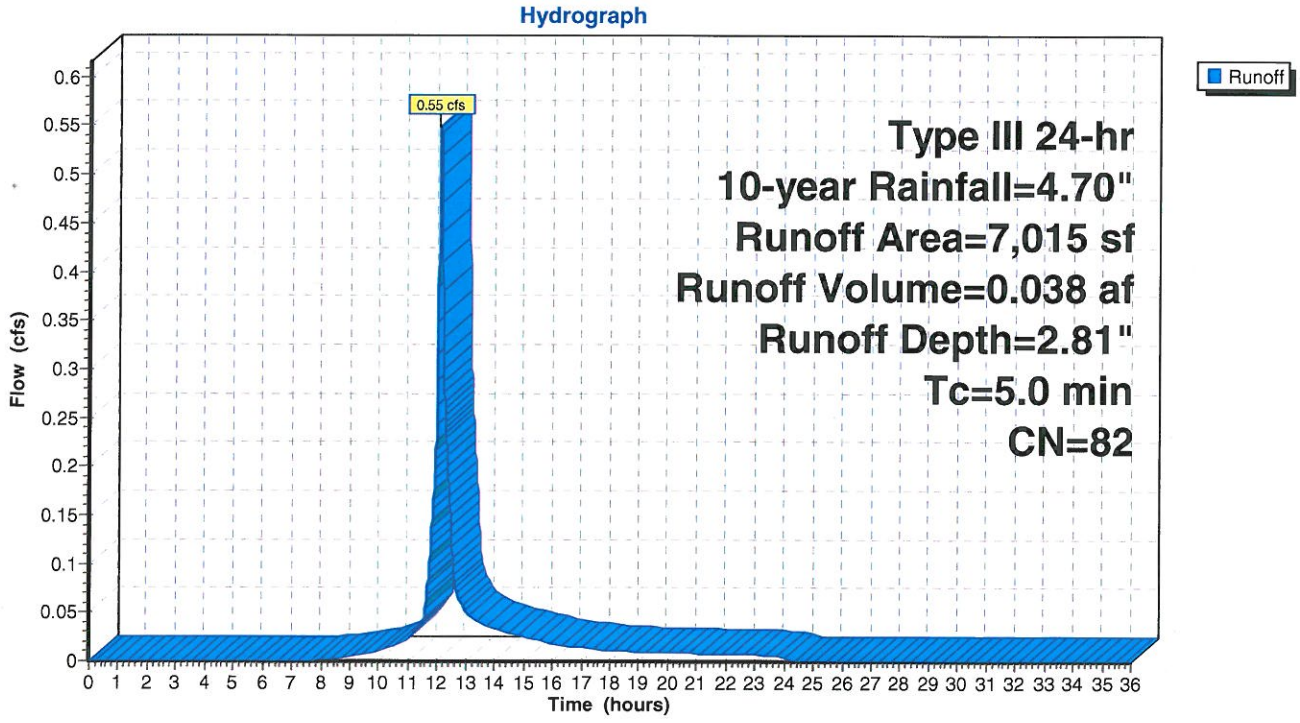
Runoff = 0.55 cfs @ 12.07 hrs, Volume= 0.038 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.70"

	Area (sf)	CN	Description
	1,911	98	Paved roads w/curbs & sewers
*	3,573	77	>75% Grass cover, Good, HSG C/D
*	1,531	74	Woods, Good, HSG C/D
	7,015	82	Weighted Average
	5,104		72.76% Pervious Area
	1,911		27.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 11: Catchment #11



Summary for Subcatchment 12: Catchment #12

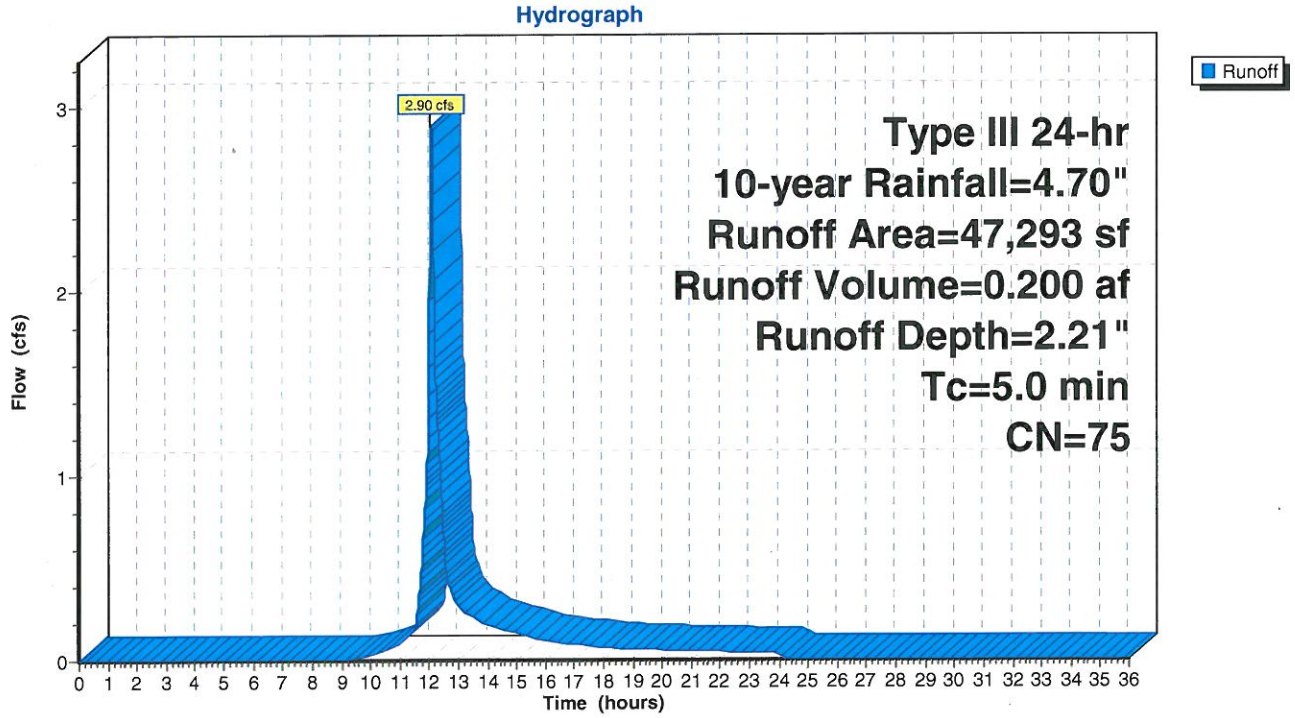
Runoff = 2.90 cfs @ 12.08 hrs, Volume= 0.200 af, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.70"

	Area (sf)	CN	Description
	14,549	98	Paved roads w/curbs & sewers
	6,878	61	>75% Grass cover, Good, HSG B
	16,049	55	Woods, Good, HSG B
	3,700	98	Paved roads w/curbs & sewers
*	4,282	77	>75% Grass cover, Good, HSG C/D
*	1,835	74	Woods, Good, HSG C/D
	47,293	75	Weighted Average
	29,044		61.41% Pervious Area
	18,249		38.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 12: Catchment #12



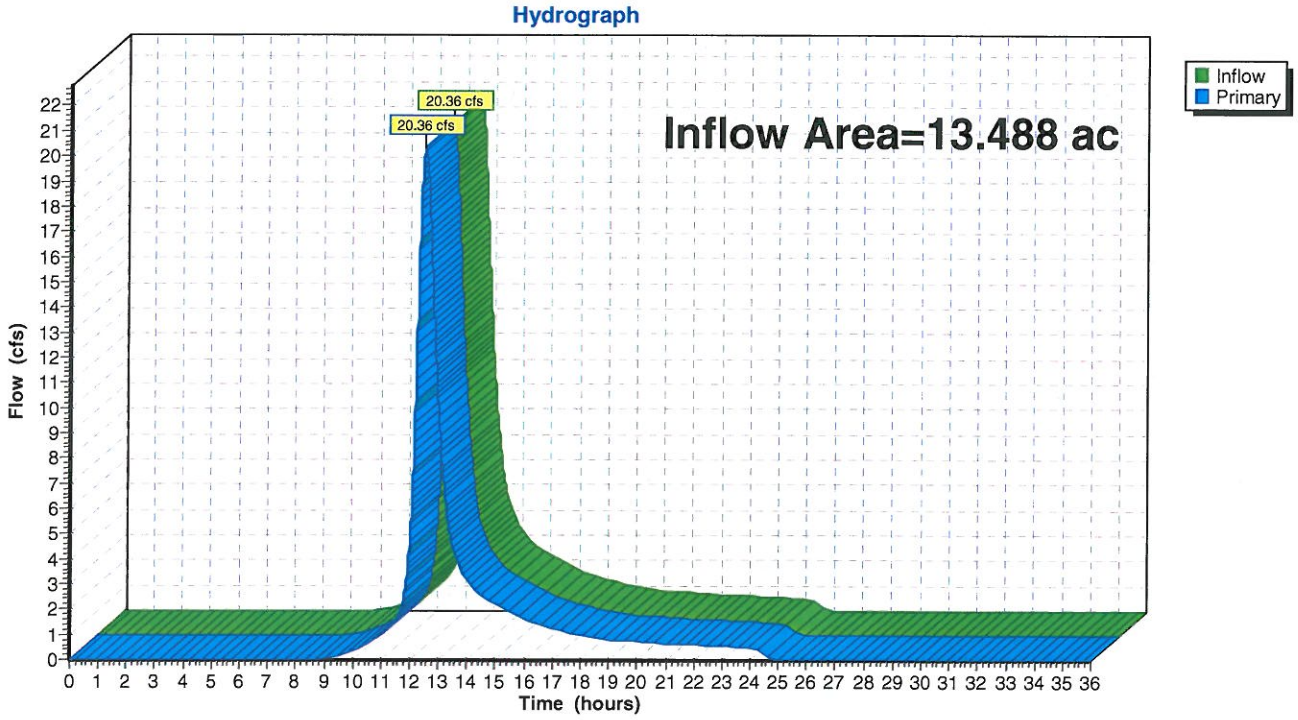
Summary for Pond 1P: (new Pond)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 13.488 ac, 16.77% Impervious, Inflow Depth = 2.46" for 10-year event
Inflow = 20.36 cfs @ 12.51 hrs, Volume= 2.764 af
Primary = 20.36 cfs @ 12.51 hrs, Volume= 2.764 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 9

Pond 1P: (new Pond)



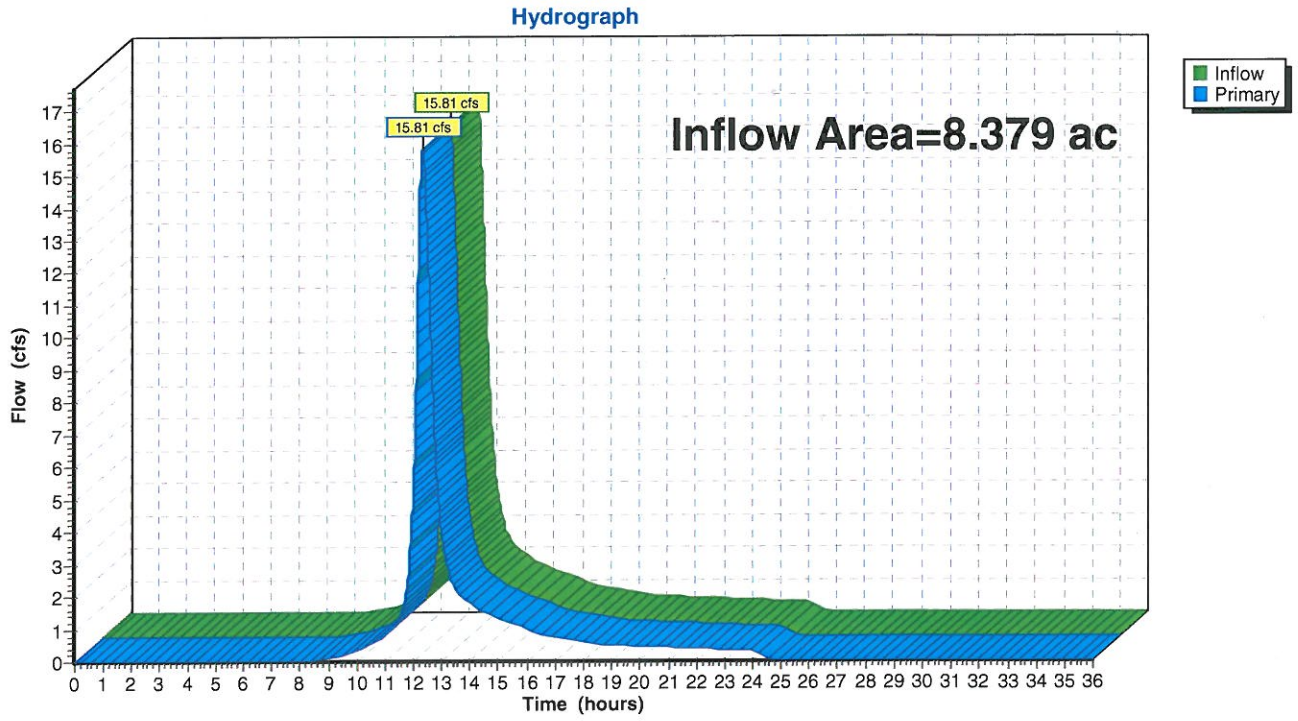
Summary for Pond 2P: (new Pond)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.379 ac, 20.78% Impervious, Inflow Depth = 2.55" for 10-year event
Inflow = 15.81 cfs @ 12.32 hrs, Volume= 1.777 af
Primary = 15.81 cfs @ 12.32 hrs, Volume= 1.777 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 9

Pond 2P: (new Pond)



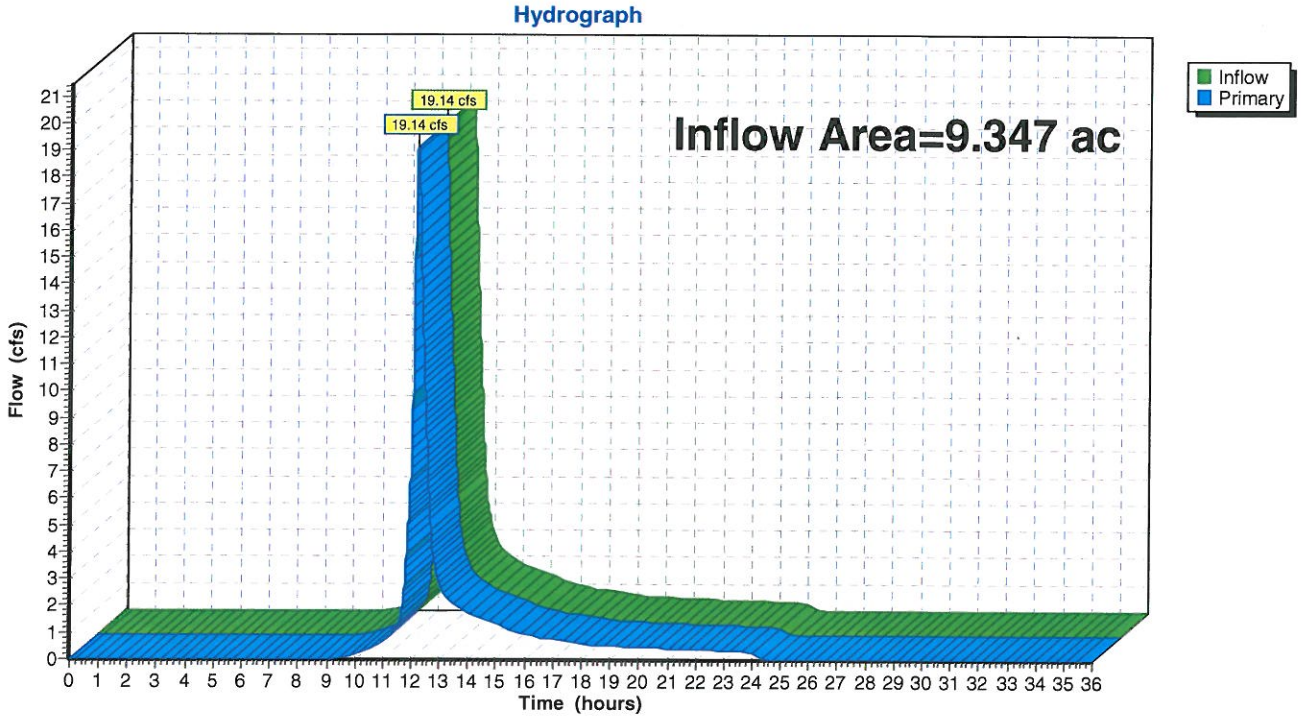
Summary for Pond 3P: (new Pond)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	9.347 ac,	2.69% Impervious,	Inflow Depth =	2.21"	for 10-year event
Inflow =	19.14 cfs @	12.18 hrs, Volume=	1.720 af		
Primary =	19.14 cfs @	12.18 hrs, Volume=	1.720 af,	Atten= 0%,	Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 9

Pond 3P: (new Pond)



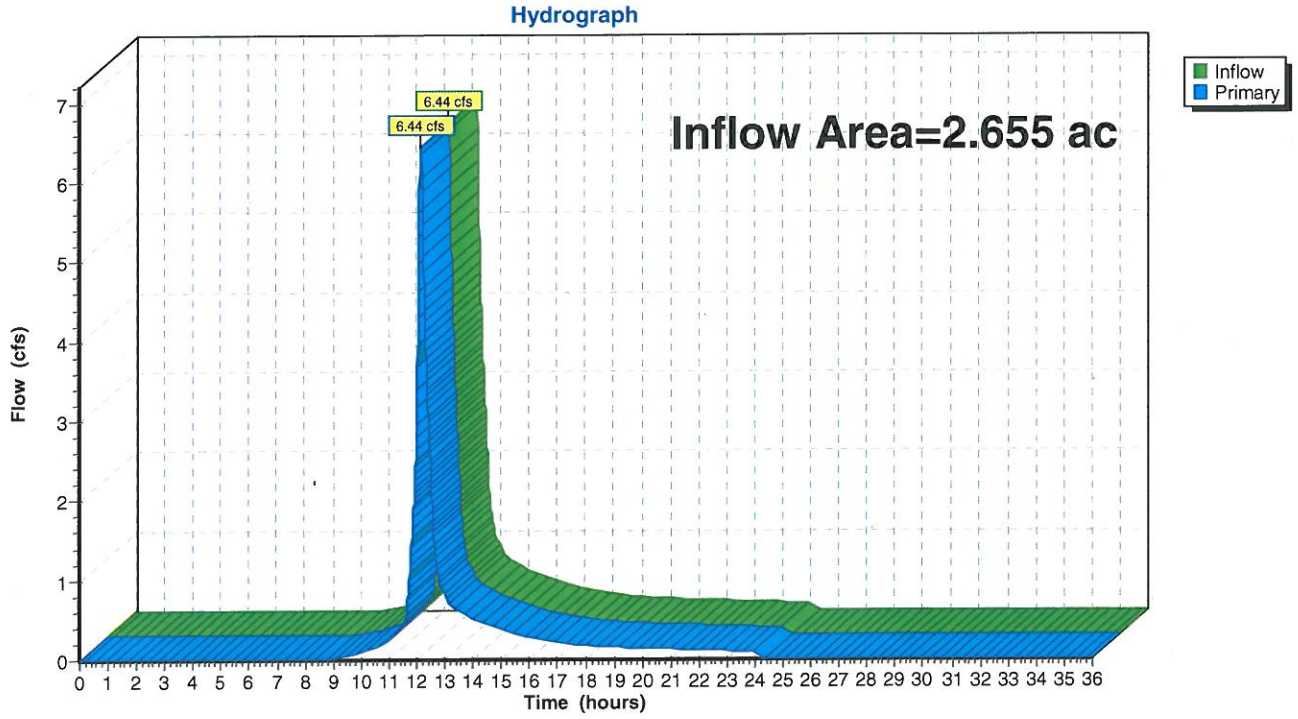
Summary for Pond 6P: (new Pond)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	2.655 ac,	6.45% Impervious,	Inflow Depth =	2.37" for 10-year event
Inflow =	6.44 cfs @	12.14 hrs, Volume=	0.525 af	
Primary =	6.44 cfs @	12.14 hrs, Volume=	0.525 af, Atten= 0%, Lag= 0.0 min	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 9

Pond 6P: (new Pond)



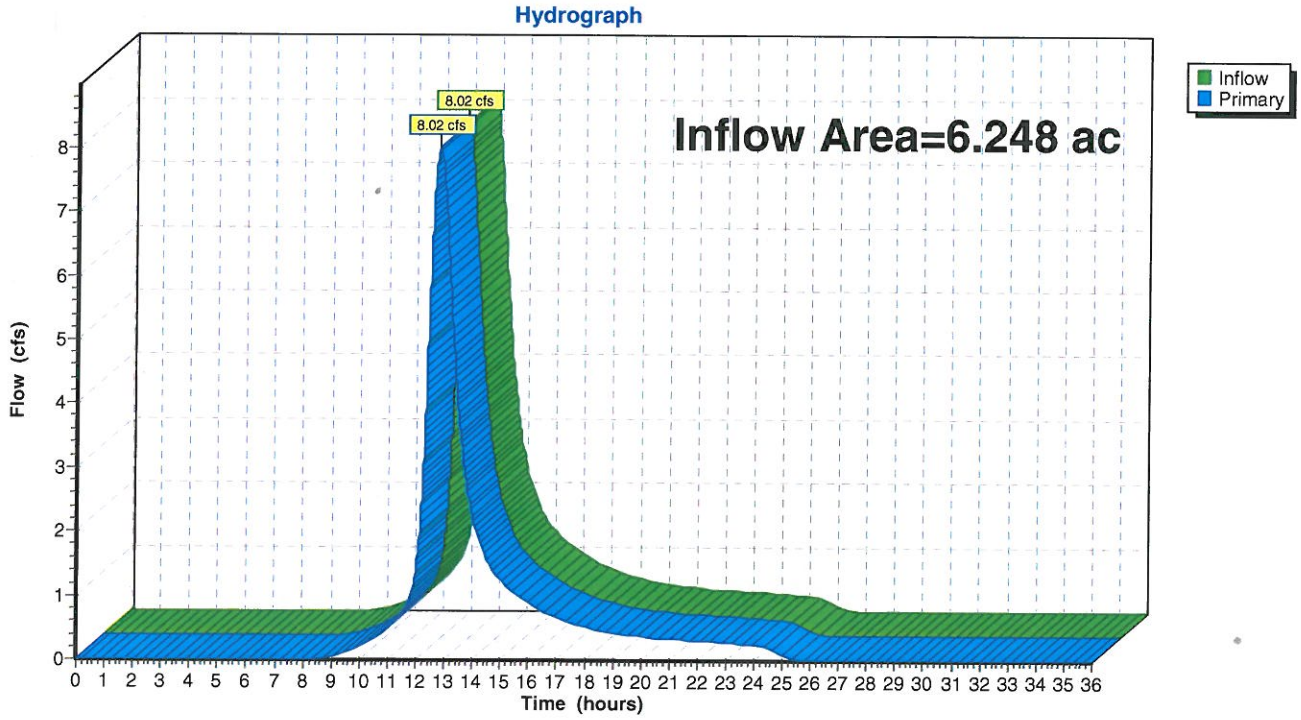
Summary for Pond 7P: (new Pond)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 6.248 ac, 25.27% Impervious, Inflow Depth = 2.72" for 10-year event
Inflow = 8.02 cfs @ 12.79 hrs, Volume= 1.417 af
Primary = 8.02 cfs @ 12.79 hrs, Volume= 1.417 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 9

Pond 7P: (new Pond)



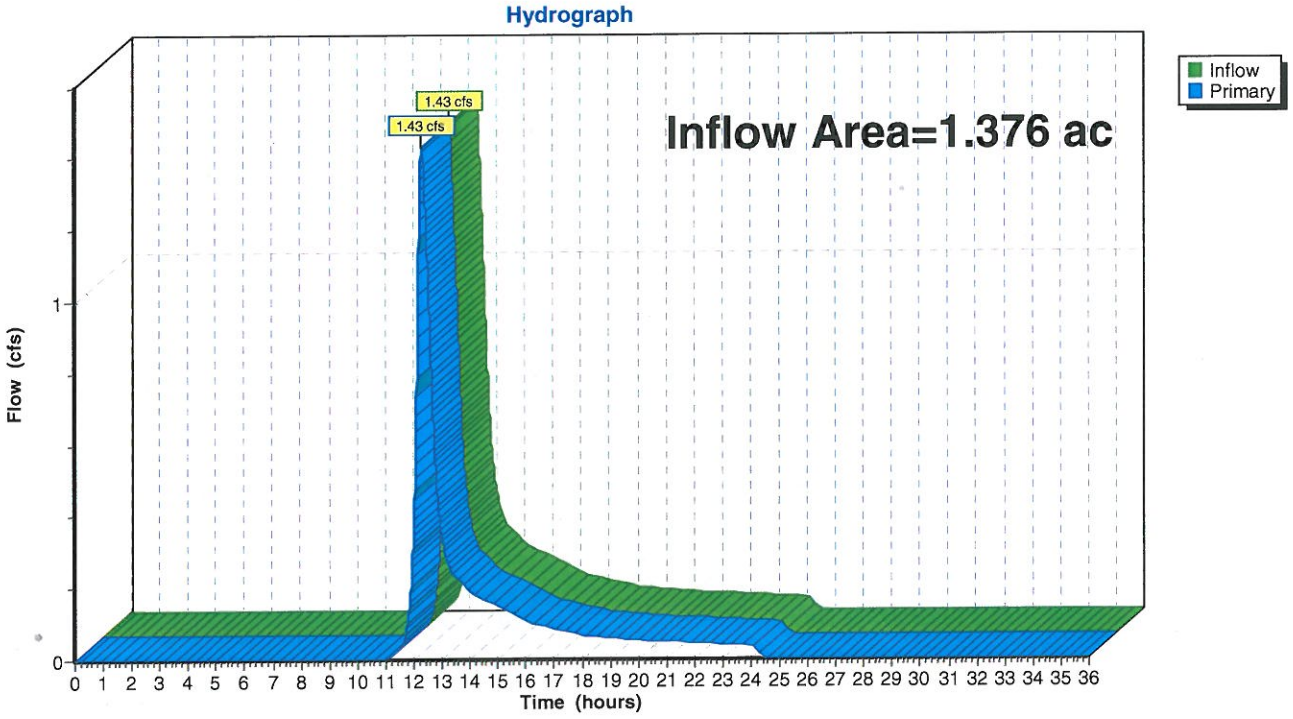
Summary for Pond 8P: (new Pond)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.376 ac, 13.51% Impervious, Inflow Depth = 1.39" for 10-year event
Inflow = 1.43 cfs @ 12.28 hrs, Volume= 0.159 af
Primary = 1.43 cfs @ 12.28 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 9

Pond 8P: (new Pond)



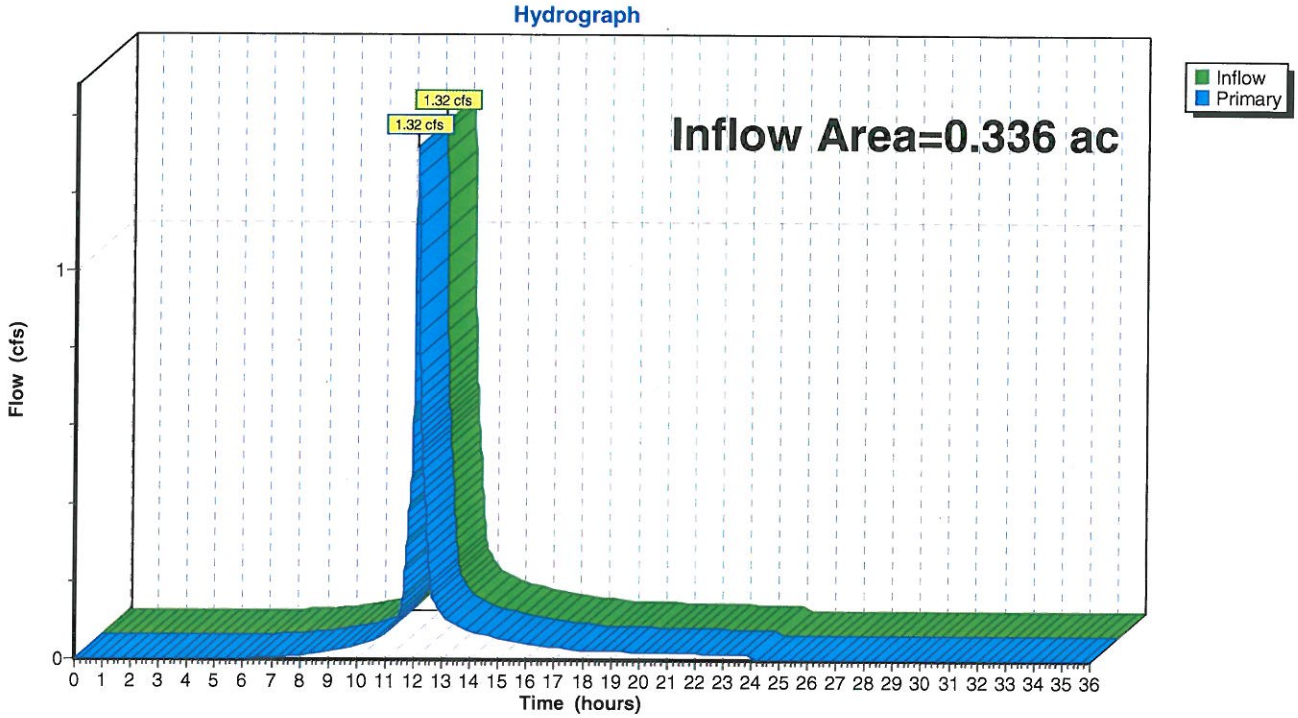
Summary for Pond 10P: (new Pond)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.336 ac, 48.29% Impervious, Inflow Depth = 3.29" for 10-year event
Inflow = 1.32 cfs @ 12.07 hrs, Volume= 0.092 af
Primary = 1.32 cfs @ 12.07 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 9

Pond 10P: (new Pond)



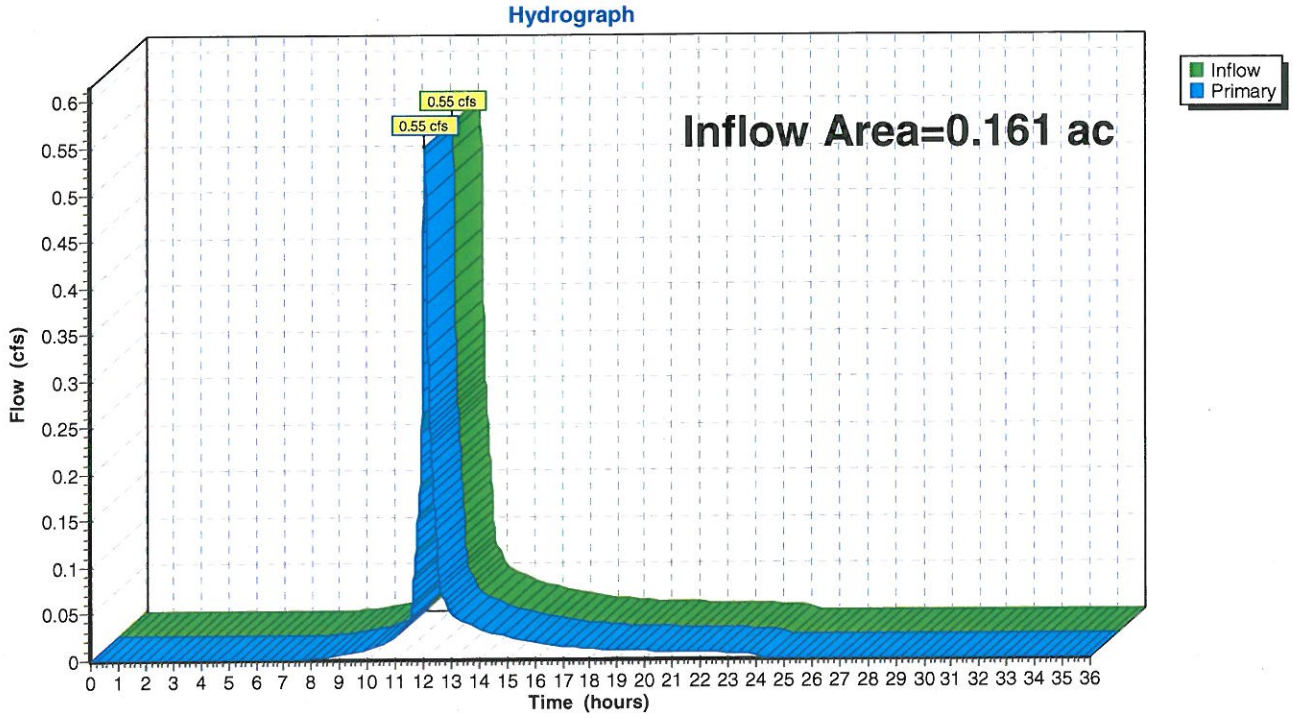
Summary for Pond 11P: (new Pond)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	0.161 ac,	27.24% Impervious,	Inflow Depth =	2.81" for 10-year event
Inflow =	0.55 cfs @	12.07 hrs, Volume=	0.038 af	
Primary =	0.55 cfs @	12.07 hrs, Volume=	0.038 af,	Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 9

Pond 11P: (new Pond)



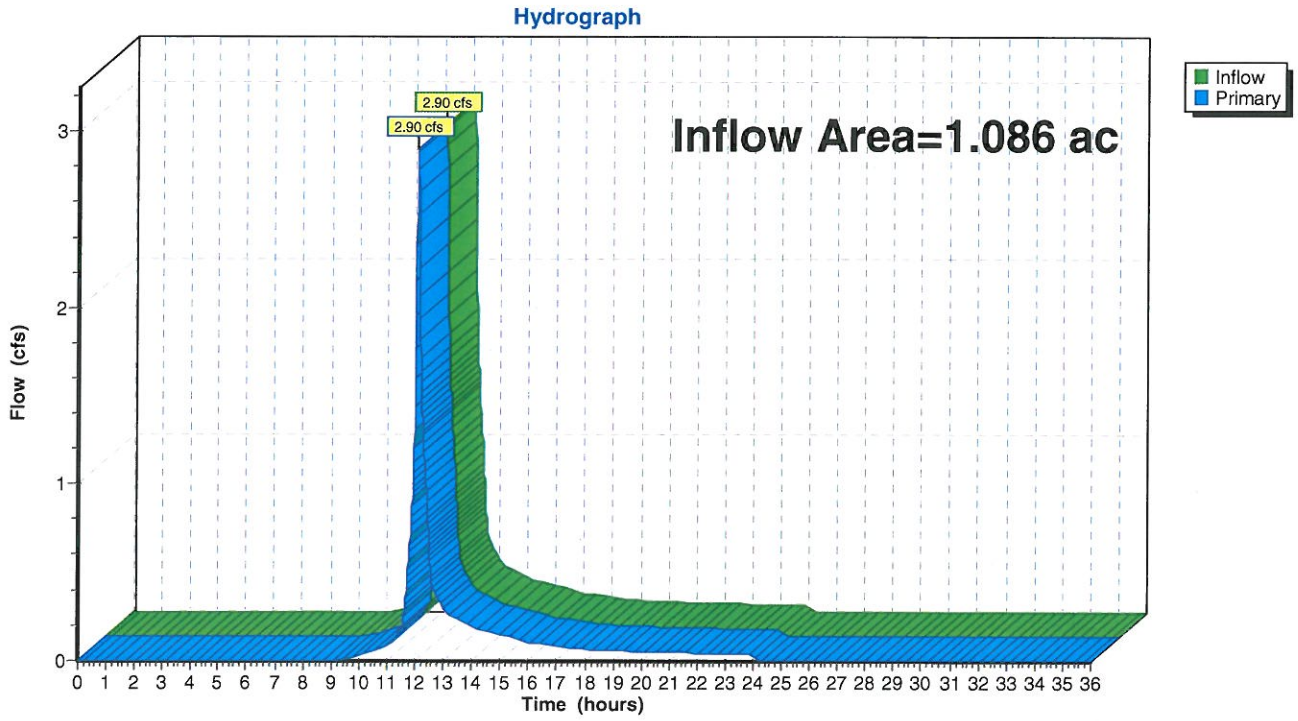
Summary for Pond 12P: (new Pond)

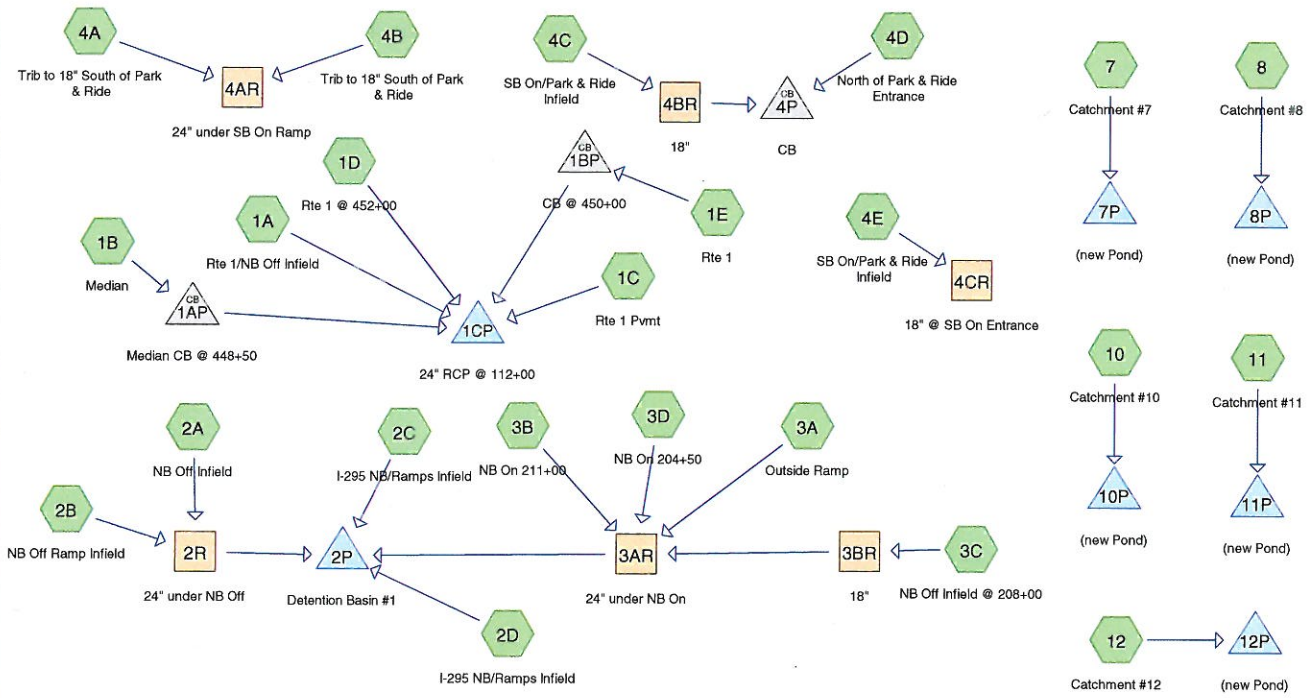
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.086 ac, 38.59% Impervious, Inflow Depth = 2.21" for 10-year event
Inflow = 2.90 cfs @ 12.08 hrs, Volume= 0.200 af
Primary = 2.90 cfs @ 12.08 hrs, Volume= 0.200 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 9

Pond 12P: (new Pond)





Routing Diagram for Yarmouth I-295 Exit 15_Prop Condition
Prepared by Fay, Spofford & Thorndike, Printed 11/13/2012
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.242	55	Woods, Good, HSG B (4A, 4E, 8, 12)
2.550	61	>75% Grass cover, Good, HSG B (1B, 4A, 4C, 4D, 4E, 8, 12)
0.172	70	Woods, Good, HSG C (4A)
0.172	74	>75% Grass cover, Good, HSG C (4A)
25.705	74	Woods, Good, HSG C/D (1A, 2A, 2C, 2D, 3A, 3C, 4B, 7, 8, 10, 11, 12)
3.384	76	>75% Grass cover, Good, HSG C/D (2C, 3A, 3C)
4.235	77	>75% Grass cover, Good, HSG C/D (1A, 1B, 2A, 2B, 2D, 4B, 7, 8, 10, 11, 12)
2.922	98	Paved roads w/curbs & sewers (7, 8, 10, 11, 12)
0.779	98	Paved roads w/curbs & sewers, HSG B (1B, 4A, 4D, 4E)
2.900	98	Paved roads w/curbs & sewers, HSG C/D (1A, 1B, 1D, 3A, 3B, 3C, 3D)
2.441	98	Paved roads w/curbs & sewers, HSG D (1C, 1E, 2A, 2C, 4B)
47.502	**77**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
5.571	HSG B	1B, 4A, 4C, 4D, 4E, 8, 12
36.568	HSG C	1A, 1B, 1D, 2A, 2B, 2C, 2D, 3A, 3B, 3C, 3D, 4A, 4B, 7, 8, 10, 11, 12
2.441	HSG D	1C, 1E, 2A, 2C, 4B
2.922	Other	7, 8, 10, 11, 12
47.502		**TOTAL AREA**

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Rte 1/NB Off Infield Runoff Area=497,200 sf 13.05% Impervious Runoff Depth=1.07"
Flow Length=1,200' Tc=34.5 min CN=77 Runoff=7.29 cfs 1.019 af

Subcatchment 1B: Median Runoff Area=22,300 sf 52.02% Impervious Runoff Depth=1.45"
Tc=5.0 min CN=83 Runoff=0.90 cfs 0.062 af

Subcatchment 1C: Rte 1 Pvmt Runoff Area=46,000 sf 100.00% Impervious Runoff Depth=2.77"
Flow Length=1,163' Tc=22.4 min CN=98 Runoff=2.00 cfs 0.244 af

Subcatchment 1D: Rte 1 @ 452+00 Runoff Area=4,100 sf 100.00% Impervious Runoff Depth=2.77"
Tc=5.0 min CN=98 Runoff=0.28 cfs 0.022 af

Subcatchment 1E: Rte 1 Runoff Area=5,400 sf 100.00% Impervious Runoff Depth=2.77"
Tc=5.0 min CN=98 Runoff=0.37 cfs 0.029 af

Subcatchment 2A: NB Off Infield Runoff Area=214,850 sf 19.01% Impervious Runoff Depth=1.19"
Flow Length=1,350' Tc=20.2 min CN=79 Runoff=4.49 cfs 0.488 af

Subcatchment 2B: NB Off Ramp Infield Runoff Area=7,400 sf 0.00% Impervious Runoff Depth=1.07"
Tc=5.0 min CN=77 Runoff=0.21 cfs 0.015 af

Subcatchment 2C: I-295 NB/Ramps Infield Runoff Area=41,200 sf 19.90% Impervious Runoff Depth=1.25"
Tc=5.0 min CN=80 Runoff=1.42 cfs 0.099 af

Subcatchment 2D: I-295 NB/Ramps Infield Runoff Area=35,500 sf 0.00% Impervious Runoff Depth=1.02"
Tc=5.0 min CN=76 Runoff=0.96 cfs 0.069 af

Subcatchment 3A: Outside Ramp Runoff Area=536,100 sf 4.68% Impervious Runoff Depth=1.02"
Flow Length=1,020' Tc=26.9 min CN=76 Runoff=8.28 cfs 1.041 af

Subcatchment 3B: NB On 211+00 Runoff Area=4,000 sf 100.00% Impervious Runoff Depth=2.77"
Tc=5.0 min CN=98 Runoff=0.28 cfs 0.021 af

Subcatchment 3C: NB Off Infield @ 208+00 Runoff Area=46,070 sf 48.99% Impervious Runoff Depth=1.74"
Tc=5.0 min CN=87 Runoff=2.24 cfs 0.153 af

Subcatchment 3D: NB On 204+50 Runoff Area=1,800 sf 100.00% Impervious Runoff Depth=2.77"
Tc=5.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 4A: Trib to 18" South of Park Runoff Area=65,700 sf 8.98% Impervious Runoff Depth=0.51"
Tc=5.0 min CN=65 Runoff=0.68 cfs 0.064 af

Subcatchment 4B: Trib to 18" South of Runoff Area=18,400 sf 32.07% Impervious Runoff Depth=1.45"
Tc=5.0 min CN=83 Runoff=0.74 cfs 0.051 af

Subcatchment 4C: SB On/Park & Ride Runoff Area=42,700 sf 0.00% Impervious Runoff Depth=0.37"
Tc=5.0 min CN=61 Runoff=0.24 cfs 0.030 af

Subcatchment 4D: North of Park & Ride Runoff Area=15,400 sf 43.51% Impervious Runoff Depth=1.07"
Tc=5.0 min CN=77 Runoff=0.44 cfs 0.032 af

Subcatchment 4E: SB On/Park & Ride Runoff Area=49,900 sf 27.25% Impervious Runoff Depth=0.63"
Tc=5.0 min CN=68 Runoff=0.72 cfs 0.060 af

Subcatchment 7: Catchment #7 Runoff Area=286,255 sf 32.18% Impervious Runoff Depth=1.38"
Flow Length=1,020' Tc=57.6 min CN=82 Runoff=4.23 cfs 0.755 af

Subcatchment 8: Catchment #8 Runoff Area=59,934 sf 13.41% Impervious Runoff Depth=0.47"
Flow Length=402' Tc=18.6 min CN=64 Runoff=0.37 cfs 0.054 af

Subcatchment 10: Catchment #10 Runoff Area=14,690 sf 48.13% Impervious Runoff Depth=1.74"
Tc=5.0 min CN=87 Runoff=0.71 cfs 0.049 af

Subcatchment 11: Catchment #11 Runoff Area=7,015 sf 25.99% Impervious Runoff Depth=1.38"
Tc=5.0 min CN=82 Runoff=0.27 cfs 0.019 af

Subcatchment 12: Catchment #12 Runoff Area=47,293 sf 38.59% Impervious Runoff Depth=0.96"
Tc=5.0 min CN=75 Runoff=1.20 cfs 0.087 af

Reach 2R: 24" under NB Off Avg. Flow Depth=0.63' Max Vel=5.44 fps Inflow=4.59 cfs 0.504 af
24.0" Round Pipe n=0.012 L=65.0' S=0.0077 '/' Capacity=21.49 cfs Outflow=4.59 cfs 0.504 af

Reach 3AR: 24" under NB On Avg. Flow Depth=0.65' Max Vel=10.31 fps Inflow=9.10 cfs 1.225 af
24.0" Round Pipe n=0.012 L=75.0' S=0.0267 '/' Capacity=40.02 cfs Outflow=9.10 cfs 1.225 af

Reach 3BR: 18" Avg. Flow Depth=0.51' Max Vel=4.21 fps Inflow=2.24 cfs 0.153 af
18.0" Round Pipe n=0.012 L=74.0' S=0.0062 '/' Capacity=8.97 cfs Outflow=2.23 cfs 0.153 af

Reach 4AR: 24" under SB On Ramp Avg. Flow Depth=0.33' Max Vel=4.07 fps Inflow=1.41 cfs 0.115 af
24.0" Round Pipe n=0.012 L=75.0' S=0.0089 '/' Capacity=23.16 cfs Outflow=1.40 cfs 0.115 af

Reach 4BR: 18" Avg. Flow Depth=0.12' Max Vel=3.48 fps Inflow=0.24 cfs 0.030 af
18.0" Round Pipe n=0.012 L=128.0' S=0.0234 '/' Capacity=17.42 cfs Outflow=0.24 cfs 0.030 af

Reach 4CR: 18" @ SB On Entrance Avg. Flow Depth=0.28' Max Vel=3.20 fps Inflow=0.72 cfs 0.060 af
18.0" Round Pipe n=0.012 L=139.0' S=0.0072 '/' Capacity=9.65 cfs Outflow=0.72 cfs 0.060 af

Pond 1AP: Median CB @ 448+50 Peak Elev=117.05' Inflow=0.90 cfs 0.062 af
15.0" Round Culvert n=0.012 L=85.5' S=0.0119 '/' Outflow=0.90 cfs 0.062 af

Pond 1BP: CB @ 450+00 Peak Elev=131.76' Inflow=0.37 cfs 0.029 af
12.0" Round Culvert n=0.012 L=48.5' S=0.0214 '/' Outflow=0.37 cfs 0.029 af

Pond 1CP: 24" RCP @ 112+00 Peak Elev=115.01' Storage=938 cf Inflow=9.15 cfs 1.374 af
24.0" Round Culvert n=0.012 L=170.0' S=0.0099 '/' Outflow=9.06 cfs 1.374 af

Pond 2P: Detention Basin #1 Peak Elev=115.22' Storage=12,738 cf Inflow=14.40 cfs 1.896 af
Outflow=11.87 cfs 1.841 af

Pond 4P: CB Peak Elev=118.10' Inflow=0.64 cfs 0.061 af
18.0" Round Culvert n=0.012 L=135.0' S=0.0093 '/' Outflow=0.64 cfs 0.061 af

Pond 7P: (new Pond) Inflow=4.23 cfs 0.755 af
Primary=4.23 cfs 0.755 af

Pond 8P: (new Pond) Inflow=0.37 cfs 0.054 af
Primary=0.37 cfs 0.054 af

Pond 10P: (new Pond) Inflow=0.71 cfs 0.049 af
Primary=0.71 cfs 0.049 af

Pond 11P: (new Pond) Inflow=0.27 cfs 0.019 af
Primary=0.27 cfs 0.019 af

Pond 12P: (new Pond) Inflow=1.20 cfs 0.087 af
Primary=1.20 cfs 0.087 af

Total Runoff Area = 47.502 ac Runoff Volume = 4.469 af Average Runoff Depth = 1.13"
80.96% Pervious = 38.459 ac 19.04% Impervious = 9.043 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Rte 1/NB Off Infield Runoff Area=497,200 sf 13.05% Impervious Runoff Depth=2.37"
Flow Length=1,200' Tc=34.5 min CN=77 Runoff=16.76 cfs 2.258 af

Subcatchment 1B: Median Runoff Area=22,300 sf 52.02% Impervious Runoff Depth=2.90"
Tc=5.0 min CN=83 Runoff=1.80 cfs 0.124 af

Subcatchment 1C: Rte 1 Pvmt Runoff Area=46,000 sf 100.00% Impervious Runoff Depth=4.46"
Flow Length=1,163' Tc=22.4 min CN=98 Runoff=3.16 cfs 0.393 af

Subcatchment 1D: Rte 1 @ 452+00 Runoff Area=4,100 sf 100.00% Impervious Runoff Depth=4.46"
Tc=5.0 min CN=98 Runoff=0.45 cfs 0.035 af

Subcatchment 1E: Rte 1 Runoff Area=5,400 sf 100.00% Impervious Runoff Depth=4.46"
Tc=5.0 min CN=98 Runoff=0.59 cfs 0.046 af

Subcatchment 2A: NB Off Infield Runoff Area=214,850 sf 19.01% Impervious Runoff Depth=2.55"
Flow Length=1,350' Tc=20.2 min CN=79 Runoff=9.89 cfs 1.046 af

Subcatchment 2B: NB Off Ramp Infield Runoff Area=7,400 sf 0.00% Impervious Runoff Depth=2.37"
Tc=5.0 min CN=77 Runoff=0.49 cfs 0.034 af

Subcatchment 2C: I-295 NB/Ramps Infield Runoff Area=41,200 sf 19.90% Impervious Runoff Depth=2.63"
Tc=5.0 min CN=80 Runoff=3.03 cfs 0.208 af

Subcatchment 2D: I-295 NB/Ramps Infield Runoff Area=35,500 sf 0.00% Impervious Runoff Depth=2.29"
Tc=5.0 min CN=76 Runoff=2.26 cfs 0.156 af

Subcatchment 3A: Outside Ramp Runoff Area=536,100 sf 4.68% Impervious Runoff Depth=2.29"
Flow Length=1,020' Tc=26.9 min CN=76 Runoff=19.50 cfs 2.349 af

Subcatchment 3B: NB On 211+00 Runoff Area=4,000 sf 100.00% Impervious Runoff Depth=4.46"
Tc=5.0 min CN=98 Runoff=0.44 cfs 0.034 af

Subcatchment 3C: NB Off Infield @ 208+00 Runoff Area=46,070 sf 48.99% Impervious Runoff Depth=3.29"
Tc=5.0 min CN=87 Runoff=4.16 cfs 0.290 af

Subcatchment 3D: NB On 204+50 Runoff Area=1,800 sf 100.00% Impervious Runoff Depth=4.46"
Tc=5.0 min CN=98 Runoff=0.20 cfs 0.015 af

Subcatchment 4A: Trib to 18" South of Park Runoff Area=65,700 sf 8.98% Impervious Runoff Depth=1.46"
Tc=5.0 min CN=65 Runoff=2.51 cfs 0.183 af

Subcatchment 4B: Trib to 18" South of Runoff Area=18,400 sf 32.07% Impervious Runoff Depth=2.90"
Tc=5.0 min CN=83 Runoff=1.49 cfs 0.102 af

Subcatchment 4C: SB On/Park & Ride Runoff Area=42,700 sf 0.00% Impervious Runoff Depth=1.19"
Tc=5.0 min CN=61 Runoff=1.26 cfs 0.097 af

Subcatchment 4D: North of Park & Ride Runoff Area=15,400 sf 43.51% Impervious Runoff Depth=2.37"
Tc=5.0 min CN=77 Runoff=1.02 cfs 0.070 af

Subcatchment 4E: SB On/Park & Ride Runoff Area=49,900 sf 27.25% Impervious Runoff Depth=1.67"
Tc=5.0 min CN=68 Runoff=2.24 cfs 0.159 af

Subcatchment 7: Catchment #7 Runoff Area=286,255 sf 32.18% Impervious Runoff Depth=2.81"
Flow Length=1,020' Tc=57.6 min CN=82 Runoff=8.72 cfs 1.540 af

Subcatchment 8: Catchment #8 Runoff Area=59,934 sf 13.41% Impervious Runoff Depth=1.39"
Flow Length=402' Tc=18.6 min CN=64 Runoff=1.43 cfs 0.159 af

Subcatchment 10: Catchment #10 Runoff Area=14,690 sf 48.13% Impervious Runoff Depth=3.29"
Tc=5.0 min CN=87 Runoff=1.33 cfs 0.092 af

Subcatchment 11: Catchment #11 Runoff Area=7,015 sf 25.99% Impervious Runoff Depth=2.81"
Tc=5.0 min CN=82 Runoff=0.55 cfs 0.038 af

Subcatchment 12: Catchment #12 Runoff Area=47,293 sf 38.59% Impervious Runoff Depth=2.21"
Tc=5.0 min CN=75 Runoff=2.90 cfs 0.200 af

Reach 2R: 24" under NB Off Avg. Flow Depth=0.96' Max Vel=6.74 fps Inflow=10.10 cfs 1.080 af
24.0" Round Pipe n=0.012 L=65.0' S=0.0077 '/' Capacity=21.49 cfs Outflow=10.09 cfs 1.080 af

Reach 3AR: 24" under NB On Avg. Flow Depth=1.03' Max Vel=12.90 fps Inflow=21.03 cfs 2.688 af
24.0" Round Pipe n=0.012 L=75.0' S=0.0267 '/' Capacity=40.02 cfs Outflow=21.03 cfs 2.688 af

Reach 3BR: 18" Avg. Flow Depth=0.72' Max Vel=4.98 fps Inflow=4.16 cfs 0.290 af
18.0" Round Pipe n=0.012 L=74.0' S=0.0062 '/' Capacity=8.97 cfs Outflow=4.15 cfs 0.290 af

Reach 4AR: 24" under SB On Ramp Avg. Flow Depth=0.56' Max Vel=5.52 fps Inflow=3.99 cfs 0.285 af
24.0" Round Pipe n=0.012 L=75.0' S=0.0089 '/' Capacity=23.16 cfs Outflow=3.98 cfs 0.285 af

Reach 4BR: 18" Avg. Flow Depth=0.27' Max Vel=5.74 fps Inflow=1.26 cfs 0.097 af
18.0" Round Pipe n=0.012 L=128.0' S=0.0234 '/' Capacity=17.42 cfs Outflow=1.26 cfs 0.097 af

Reach 4CR: 18" @ SB On Entrance Avg. Flow Depth=0.49' Max Vel=4.44 fps Inflow=2.24 cfs 0.159 af
18.0" Round Pipe n=0.012 L=139.0' S=0.0072 '/' Capacity=9.65 cfs Outflow=2.23 cfs 0.159 af

Pond 1AP: Median CB @ 448+50 Peak Elev=117.26' Inflow=1.80 cfs 0.124 af
15.0" Round Culvert n=0.012 L=85.5' S=0.0119 '/' Outflow=1.80 cfs 0.124 af

Pond 1BP: CB @ 450+00 Peak Elev=131.84' Inflow=0.59 cfs 0.046 af
12.0" Round Culvert n=0.012 L=48.5' S=0.0214 '/' Outflow=0.59 cfs 0.046 af

Pond 1CP: 24" RCP @ 112+00 Peak Elev=115.81' Storage=3,770 cf Inflow=19.89 cfs 2.856 af
24.0" Round Culvert n=0.012 L=170.0' S=0.0099 '/' Outflow=18.92 cfs 2.856 af

Pond 2P: Detention Basin #1 Peak Elev=117.00' Storage=32,652 cf Inflow=32.60 cfs 4.131 af
Outflow=21.65 cfs 4.076 af

Pond 4P: CB Peak Elev=118.44' Inflow=2.26 cfs 0.167 af
18.0" Round Culvert n=0.012 L=135.0' S=0.0093 '/' Outflow=2.26 cfs 0.167 af

Pond 7P: (new Pond) Inflow=8.72 cfs 1.540 af
Primary=8.72 cfs 1.540 af

Pond 8P: (new Pond) Inflow=1.43 cfs 0.159 af
Primary=1.43 cfs 0.159 af

Pond 10P: (new Pond) Inflow=1.33 cfs 0.092 af
Primary=1.33 cfs 0.092 af

Pond 11P: (new Pond) Inflow=0.55 cfs 0.038 af
Primary=0.55 cfs 0.038 af

Pond 12P: (new Pond) Inflow=2.90 cfs 0.200 af
Primary=2.90 cfs 0.200 af

Total Runoff Area = 47.502 ac Runoff Volume = 9.628 af Average Runoff Depth = 2.43"
80.96% Pervious = 38.459 ac 19.04% Impervious = 9.043 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Rte 1/NB Off Infield Runoff Area=497,200 sf 13.05% Impervious Runoff Depth=3.05"
Flow Length=1,200' Tc=34.5 min CN=77 Runoff=21.59 cfs 2.898 af

Subcatchment 1B: Median Runoff Area=22,300 sf 52.02% Impervious Runoff Depth=3.63"
Tc=5.0 min CN=83 Runoff=2.24 cfs 0.155 af

Subcatchment 1C: Rte 1 Pvmt Runoff Area=46,000 sf 100.00% Impervious Runoff Depth=5.26"
Flow Length=1,163' Tc=22.4 min CN=98 Runoff=3.70 cfs 0.463 af

Subcatchment 1D: Rte 1 @ 452+00 Runoff Area=4,100 sf 100.00% Impervious Runoff Depth=5.26"
Tc=5.0 min CN=98 Runoff=0.53 cfs 0.041 af

Subcatchment 1E: Rte 1 Runoff Area=5,400 sf 100.00% Impervious Runoff Depth=5.26"
Tc=5.0 min CN=98 Runoff=0.69 cfs 0.054 af

Subcatchment 2A: NB Off Infield Runoff Area=214,850 sf 19.01% Impervious Runoff Depth=3.24"
Flow Length=1,350' Tc=20.2 min CN=79 Runoff=12.58 cfs 1.330 af

Subcatchment 2B: NB Off Ramp Infield Runoff Area=7,400 sf 0.00% Impervious Runoff Depth=3.05"
Tc=5.0 min CN=77 Runoff=0.63 cfs 0.043 af

Subcatchment 2C: I-295 NB/Ramps Infield Runoff Area=41,200 sf 19.90% Impervious Runoff Depth=3.33"
Tc=5.0 min CN=80 Runoff=3.83 cfs 0.263 af

Subcatchment 2D: I-295 NB/Ramps Infield Runoff Area=35,500 sf 0.00% Impervious Runoff Depth=2.95"
Tc=5.0 min CN=76 Runoff=2.93 cfs 0.201 af

Subcatchment 3A: Outside Ramp Runoff Area=536,100 sf 4.68% Impervious Runoff Depth=2.95"
Flow Length=1,020' Tc=26.9 min CN=76 Runoff=25.26 cfs 3.029 af

Subcatchment 3B: NB On 211+00 Runoff Area=4,000 sf 100.00% Impervious Runoff Depth=5.26"
Tc=5.0 min CN=98 Runoff=0.51 cfs 0.040 af

Subcatchment 3C: NB Off Infield @ 208+00 Runoff Area=46,070 sf 48.99% Impervious Runoff Depth=4.04"
Tc=5.0 min CN=87 Runoff=5.07 cfs 0.356 af

Subcatchment 3D: NB On 204+50 Runoff Area=1,800 sf 100.00% Impervious Runoff Depth=5.26"
Tc=5.0 min CN=98 Runoff=0.23 cfs 0.018 af

Subcatchment 4A: Trib to 18" South of Park Runoff Area=65,700 sf 8.98% Impervious Runoff Depth=1.99"
Tc=5.0 min CN=65 Runoff=3.54 cfs 0.251 af

Subcatchment 4B: Trib to 18" South of Runoff Area=18,400 sf 32.07% Impervious Runoff Depth=3.63"
Tc=5.0 min CN=83 Runoff=1.85 cfs 0.128 af

Subcatchment 4C: SB On/Park & Ride Runoff Area=42,700 sf 0.00% Impervious Runoff Depth=1.68"
Tc=5.0 min CN=61 Runoff=1.87 cfs 0.137 af

Subcatchment 4D: North of Park & Ride Runoff Area=15,400 sf 43.51% Impervious Runoff Depth=3.05"
Tc=5.0 min CN=77 Runoff=1.31 cfs 0.090 af

Subcatchment 4E: SB On/Park & Ride Runoff Area=49,900 sf 27.25% Impervious Runoff Depth=2.24"
Tc=5.0 min CN=68 Runoff=3.07 cfs 0.214 af

Subcatchment 7: Catchment #7 Runoff Area=286,255 sf 32.18% Impervious Runoff Depth=3.53"
Flow Length=1,020' Tc=57.6 min CN=82 Runoff=10.94 cfs 1.933 af

Subcatchment 8: Catchment #8 Runoff Area=59,934 sf 13.41% Impervious Runoff Depth=1.91"
Flow Length=402' Tc=18.6 min CN=64 Runoff=2.04 cfs 0.219 af

Subcatchment 10: Catchment #10 Runoff Area=14,690 sf 48.13% Impervious Runoff Depth=4.04"
Tc=5.0 min CN=87 Runoff=1.62 cfs 0.114 af

Subcatchment 11: Catchment #11 Runoff Area=7,015 sf 25.99% Impervious Runoff Depth=3.53"
Tc=5.0 min CN=82 Runoff=0.69 cfs 0.047 af

Subcatchment 12: Catchment #12 Runoff Area=47,293 sf 38.59% Impervious Runoff Depth=2.86"
Tc=5.0 min CN=75 Runoff=3.77 cfs 0.259 af

Reach 2R: 24" under NB Off Avg. Flow Depth=1.11' Max Vel=7.15 fps Inflow=12.85 cfs 1.373 af
24.0" Round Pipe n=0.012 L=65.0' S=0.0077 '/' Capacity=21.49 cfs Outflow=12.84 cfs 1.373 af

Reach 3AR: 24" under NB On Avg. Flow Depth=1.21' Max Vel=13.69 fps Inflow=27.13 cfs 3.443 af
24.0" Round Pipe n=0.012 L=75.0' S=0.0267 '/' Capacity=40.02 cfs Outflow=27.12 cfs 3.443 af

Reach 3BR: 18" Avg. Flow Depth=0.81' Max Vel=5.23 fps Inflow=5.07 cfs 0.356 af
18.0" Round Pipe n=0.012 L=74.0' S=0.0062 '/' Capacity=8.97 cfs Outflow=5.06 cfs 0.356 af

Reach 4AR: 24" under SB On Ramp Avg. Flow Depth=0.66' Max Vel=6.00 fps Inflow=5.38 cfs 0.378 af
24.0" Round Pipe n=0.012 L=75.0' S=0.0089 '/' Capacity=23.16 cfs Outflow=5.37 cfs 0.378 af

Reach 4BR: 18" Avg. Flow Depth=0.33' Max Vel=6.43 fps Inflow=1.87 cfs 0.137 af
18.0" Round Pipe n=0.012 L=128.0' S=0.0234 '/' Capacity=17.42 cfs Outflow=1.87 cfs 0.137 af

Reach 4CR: 18" @ SB On Entrance Avg. Flow Depth=0.58' Max Vel=4.85 fps Inflow=3.07 cfs 0.214 af
18.0" Round Pipe n=0.012 L=139.0' S=0.0072 '/' Capacity=9.65 cfs Outflow=3.06 cfs 0.214 af

Pond 1AP: Median CB @ 448+50 Peak Elev=117.34' Inflow=2.24 cfs 0.155 af
15.0" Round Culvert n=0.012 L=85.5' S=0.0119 '/' Outflow=2.24 cfs 0.155 af

Pond 1BP: CB @ 450+00 Peak Elev=131.88' Inflow=0.69 cfs 0.054 af
12.0" Round Culvert n=0.012 L=48.5' S=0.0214 '/' Outflow=0.69 cfs 0.054 af

Pond 1CP: 24" RCP @ 112+00 Peak Elev=116.26' Storage=6,607 cf Inflow=25.29 cfs 3.611 af
24.0" Round Culvert n=0.012 L=170.0' S=0.0099 '/' Outflow=22.74 cfs 3.611 af

Pond 2P: Detention Basin #1 Peak Elev=117.61' Storage=41,868 cf Inflow=41.81 cfs 5.280 af
Outflow=29.03 cfs 5.224 af

Pond 4P: CB Peak Elev=118.59' Inflow=3.16 cfs 0.227 af
18.0" Round Culvert n=0.012 L=135.0' S=0.0093 '/' Outflow=3.16 cfs 0.227 af

Pond 7P: (new Pond) Inflow=10.94 cfs 1.933 af
Primary=10.94 cfs 1.933 af

Pond 8P: (new Pond) Inflow=2.04 cfs 0.219 af
Primary=2.04 cfs 0.219 af

Pond 10P: (new Pond) Inflow=1.62 cfs 0.114 af
Primary=1.62 cfs 0.114 af

Pond 11P: (new Pond) Inflow=0.69 cfs 0.047 af
Primary=0.69 cfs 0.047 af

Pond 12P: (new Pond) Inflow=3.77 cfs 0.259 af
Primary=3.77 cfs 0.259 af

Total Runoff Area = 47.502 ac Runoff Volume = 12.283 af Average Runoff Depth = 3.10"
80.96% Pervious = 38.459 ac 19.04% Impervious = 9.043 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Rte 1/NB Off Infield Runoff Area=497,200 sf 13.05% Impervious Runoff Depth=3.57"
Flow Length=1,200' Tc=34.5 min CN=77 Runoff=25.30 cfs 3.392 af

Subcatchment 1B: Median Runoff Area=22,300 sf 52.02% Impervious Runoff Depth=4.18"
Tc=5.0 min CN=83 Runoff=2.57 cfs 0.179 af

Subcatchment 1C: Rte 1 Pvmt Runoff Area=46,000 sf 100.00% Impervious Runoff Depth=5.86"
Flow Length=1,163' Tc=22.4 min CN=98 Runoff=4.11 cfs 0.516 af

Subcatchment 1D: Rte 1 @ 452+00 Runoff Area=4,100 sf 100.00% Impervious Runoff Depth=5.86"
Tc=5.0 min CN=98 Runoff=0.58 cfs 0.046 af

Subcatchment 1E: Rte 1 Runoff Area=5,400 sf 100.00% Impervious Runoff Depth=5.86"
Tc=5.0 min CN=98 Runoff=0.77 cfs 0.061 af

Subcatchment 2A: NB Off Infield Runoff Area=214,850 sf 19.01% Impervious Runoff Depth=3.77"
Flow Length=1,350' Tc=20.2 min CN=79 Runoff=14.64 cfs 1.549 af

Subcatchment 2B: NB Off Ramp Infield Runoff Area=7,400 sf 0.00% Impervious Runoff Depth=3.57"
Tc=5.0 min CN=77 Runoff=0.74 cfs 0.050 af

Subcatchment 2C: I-295 NB/Ramps Infield Runoff Area=41,200 sf 19.90% Impervious Runoff Depth=3.87"
Tc=5.0 min CN=80 Runoff=4.43 cfs 0.305 af

Subcatchment 2D: I-295 NB/Ramps Infield Runoff Area=35,500 sf 0.00% Impervious Runoff Depth=3.47"
Tc=5.0 min CN=76 Runoff=3.43 cfs 0.235 af

Subcatchment 3A: Outside Ramp Runoff Area=536,100 sf 4.68% Impervious Runoff Depth=3.47"
Flow Length=1,020' Tc=26.9 min CN=76 Runoff=29.68 cfs 3.555 af

Subcatchment 3B: NB On 211+00 Runoff Area=4,000 sf 100.00% Impervious Runoff Depth=5.86"
Tc=5.0 min CN=98 Runoff=0.57 cfs 0.045 af

Subcatchment 3C: NB Off Infield @ 208+00 Runoff Area=46,070 sf 48.99% Impervious Runoff Depth=4.61"
Tc=5.0 min CN=87 Runoff=5.75 cfs 0.407 af

Subcatchment 3D: NB On 204+50 Runoff Area=1,800 sf 100.00% Impervious Runoff Depth=5.86"
Tc=5.0 min CN=98 Runoff=0.26 cfs 0.020 af

Subcatchment 4A: Trib to 18" South of Park Runoff Area=65,700 sf 8.98% Impervious Runoff Depth=2.42"
Tc=5.0 min CN=65 Runoff=4.35 cfs 0.305 af

Subcatchment 4B: Trib to 18" South of Runoff Area=18,400 sf 32.07% Impervious Runoff Depth=4.18"
Tc=5.0 min CN=83 Runoff=2.12 cfs 0.147 af

Subcatchment 4C: SB On/Park & Ride Runoff Area=42,700 sf 0.00% Impervious Runoff Depth=2.07"
Tc=5.0 min CN=61 Runoff=2.36 cfs 0.169 af

Subcatchment 4D: North of Park & Ride Runoff Area=15,400 sf 43.51% Impervious Runoff Depth=3.57"
Tc=5.0 min CN=77 Runoff=1.53 cfs 0.105 af

Subcatchment 4E: SB On/Park & Ride Runoff Area=49,900 sf 27.25% Impervious Runoff Depth=2.70"
Tc=5.0 min CN=68 Runoff=3.72 cfs 0.258 af

Subcatchment 7: Catchment #7 Runoff Area=286,255 sf 32.18% Impervious Runoff Depth=4.08"
Flow Length=1,020' Tc=57.6 min CN=82 Runoff=12.62 cfs 2.234 af

Subcatchment 8: Catchment #8 Runoff Area=59,934 sf 13.41% Impervious Runoff Depth=2.33"
Flow Length=402' Tc=18.6 min CN=64 Runoff=2.53 cfs 0.268 af

Subcatchment 10: Catchment #10 Runoff Area=14,690 sf 48.13% Impervious Runoff Depth=4.61"
Tc=5.0 min CN=87 Runoff=1.83 cfs 0.130 af

Subcatchment 11: Catchment #11 Runoff Area=7,015 sf 25.99% Impervious Runoff Depth=4.08"
Tc=5.0 min CN=82 Runoff=0.79 cfs 0.055 af

Subcatchment 12: Catchment #12 Runoff Area=47,293 sf 38.59% Impervious Runoff Depth=3.37"
Tc=5.0 min CN=75 Runoff=4.45 cfs 0.305 af

Reach 2R: 24" under NB Off Avg. Flow Depth=1.23' Max Vel=7.39 fps Inflow=14.95 cfs 1.600 af
24.0" Round Pipe n=0.012 L=65.0' S=0.0077 '/' Capacity=21.49 cfs Outflow=14.94 cfs 1.600 af

Reach 3AR: 24" under NB On Avg. Flow Depth=1.35' Max Vel=14.14 fps Inflow=31.81 cfs 4.027 af
24.0" Round Pipe n=0.012 L=75.0' S=0.0267 '/' Capacity=40.02 cfs Outflow=31.80 cfs 4.027 af

Reach 3BR: 18" Avg. Flow Depth=0.87' Max Vel=5.39 fps Inflow=5.75 cfs 0.407 af
18.0" Round Pipe n=0.012 L=74.0' S=0.0062 '/' Capacity=8.97 cfs Outflow=5.74 cfs 0.407 af

Reach 4AR: 24" under SB On Ramp Avg. Flow Depth=0.72' Max Vel=6.32 fps Inflow=6.47 cfs 0.452 af
24.0" Round Pipe n=0.012 L=75.0' S=0.0089 '/' Capacity=23.16 cfs Outflow=6.46 cfs 0.452 af

Reach 4BR: 18" Avg. Flow Depth=0.37' Max Vel=6.88 fps Inflow=2.36 cfs 0.169 af
18.0" Round Pipe n=0.012 L=128.0' S=0.0234 '/' Capacity=17.42 cfs Outflow=2.35 cfs 0.169 af

Reach 4CR: 18" @ SB On Entrance Avg. Flow Depth=0.65' Max Vel=5.10 fps Inflow=3.72 cfs 0.258 af
18.0" Round Pipe n=0.012 L=139.0' S=0.0072 '/' Capacity=9.65 cfs Outflow=3.71 cfs 0.258 af

Pond 1AP: Median CB @ 448+50 Peak Elev=117.41' Inflow=2.57 cfs 0.179 af
15.0" Round Culvert n=0.012 L=85.5' S=0.0119 '/' Outflow=2.57 cfs 0.179 af

Pond 1BP: CB @ 450+00 Peak Elev=131.90' Inflow=0.77 cfs 0.061 af
12.0" Round Culvert n=0.012 L=48.5' S=0.0214 '/' Outflow=0.77 cfs 0.061 af

Pond 1CP: 24" RCP @ 112+00 Peak Elev=116.78' Storage=10,950 cf Inflow=29.42 cfs 4.193 af
24.0" Round Culvert n=0.012 L=170.0' S=0.0099 '/' Outflow=23.84 cfs 4.193 af

Pond 2P: Detention Basin #1 Peak Elev=118.02' Storage=48,788 cf Inflow=48.85 cfs 6.167 af
Outflow=34.04 cfs 6.112 af

Pond 4P: CB Peak Elev=118.69' Inflow=3.87 cfs 0.274 af
18.0" Round Culvert n=0.012 L=135.0' S=0.0093 '/' Outflow=3.87 cfs 0.274 af

Pond 7P: (new Pond) Inflow=12.62 cfs 2.234 af
Primary=12.62 cfs 2.234 af

Pond 8P: (new Pond) Inflow=2.53 cfs 0.268 af
Primary=2.53 cfs 0.268 af

Pond 10P: (new Pond) Inflow=1.83 cfs 0.130 af
Primary=1.83 cfs 0.130 af

Pond 11P: (new Pond) Inflow=0.79 cfs 0.055 af
Primary=0.79 cfs 0.055 af

Pond 12P: (new Pond) Inflow=4.45 cfs 0.305 af
Primary=4.45 cfs 0.305 af

Total Runoff Area = 47.502 ac Runoff Volume = 14.335 af Average Runoff Depth = 3.62"
80.96% Pervious = 38.459 ac 19.04% Impervious = 9.043 ac

Summary for Subcatchment 1A: Rte 1/NB Off Infield

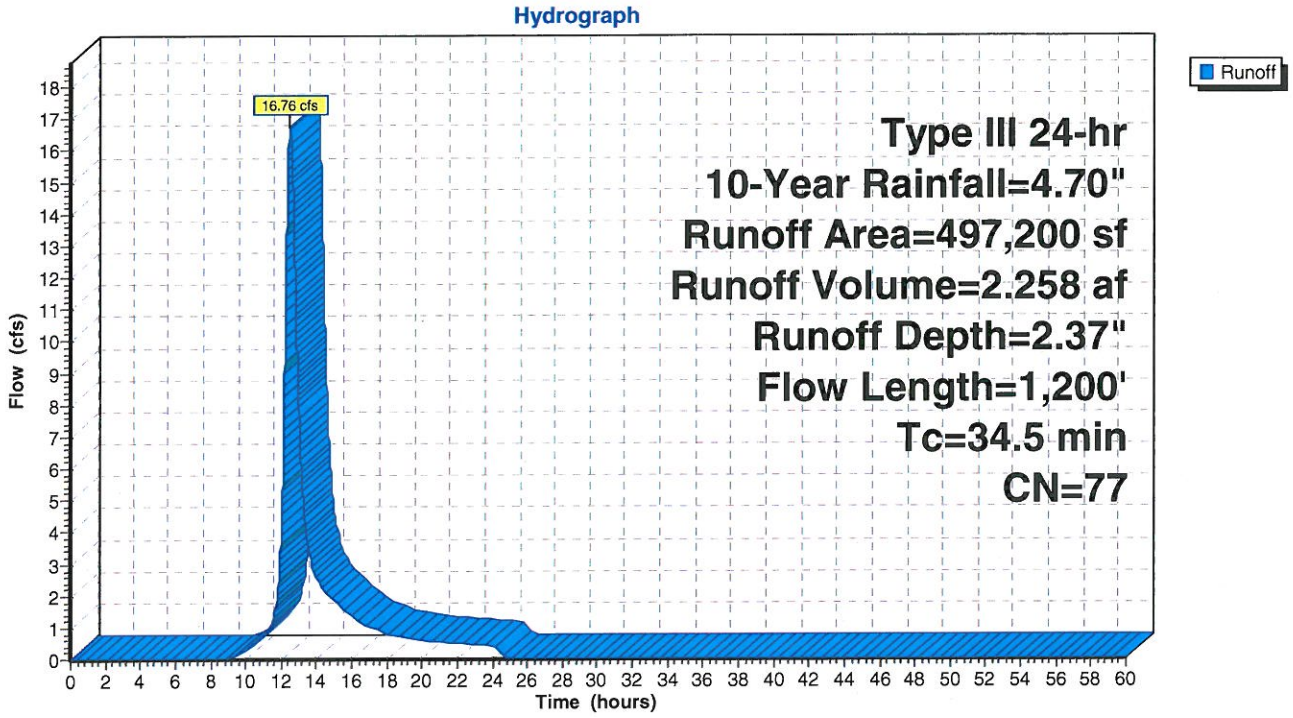
Runoff = 16.76 cfs @ 12.49 hrs, Volume= 2.258 af, Depth= 2.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
*	389,070	74	Woods, Good, HSG C/D
*	43,230	77	>75% Grass cover, Good, HSG C/D
*	64,900	98	Paved roads w/curbs & sewers, HSG C/D
	497,200	77	Weighted Average
	432,300		86.95% Pervious Area
	64,900		13.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	30	0.0570	1.59		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.3	40	0.5000	0.50		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
8.3	30	0.0208	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
13.9	600	0.0208	0.72		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.7	500	0.0027	0.78		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
34.5	1,200	Total			

Subcatchment 1A: Rte 1/NB Off Infield



Summary for Subcatchment 1B: Median

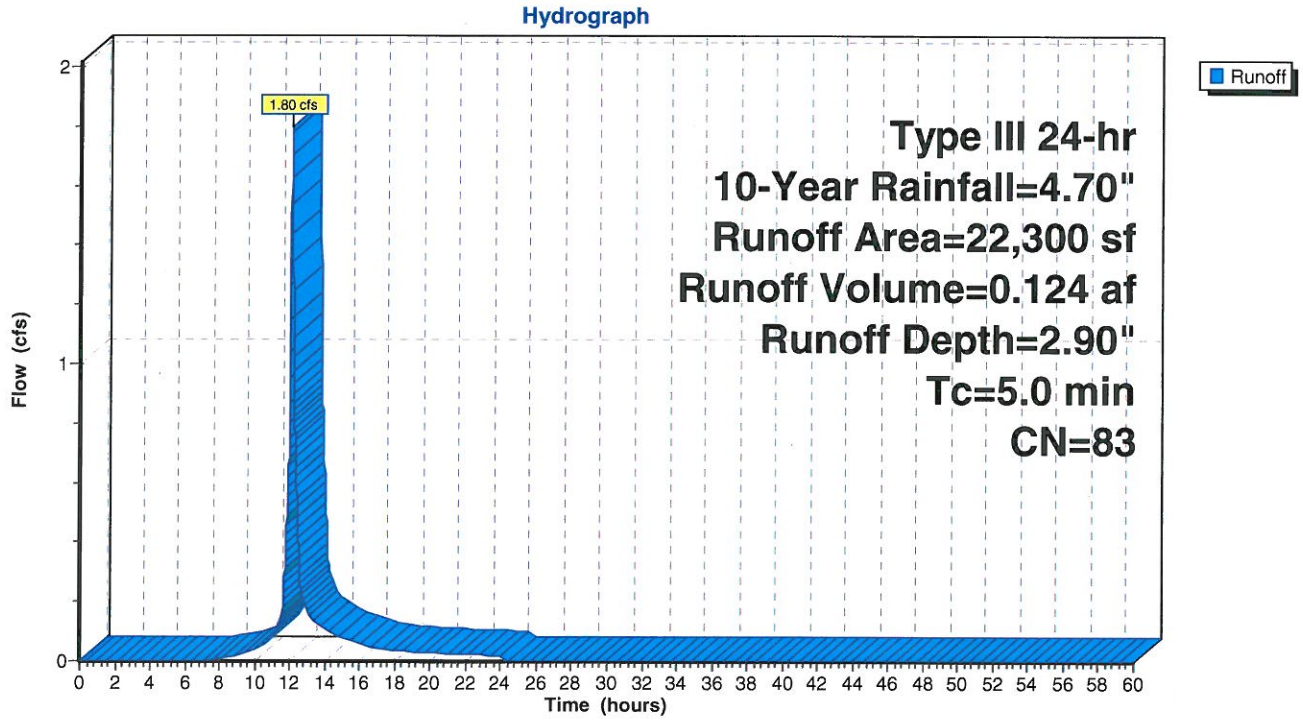
Runoff = 1.80 cfs @ 12.07 hrs, Volume= 0.124 af, Depth= 2.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
	7,135	61	>75% Grass cover, Good, HSG B
*	3,565	77	>75% Grass cover, Good, HSG C/D
	7,735	98	Paved roads w/curbs & sewers, HSG B
*	3,865	98	Paved roads w/curbs & sewers, HSG C/D
	22,300	83	Weighted Average
	10,700		47.98% Pervious Area
	11,600		52.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1B: Median



Summary for Subcatchment 1C: Rte 1 Pvmt

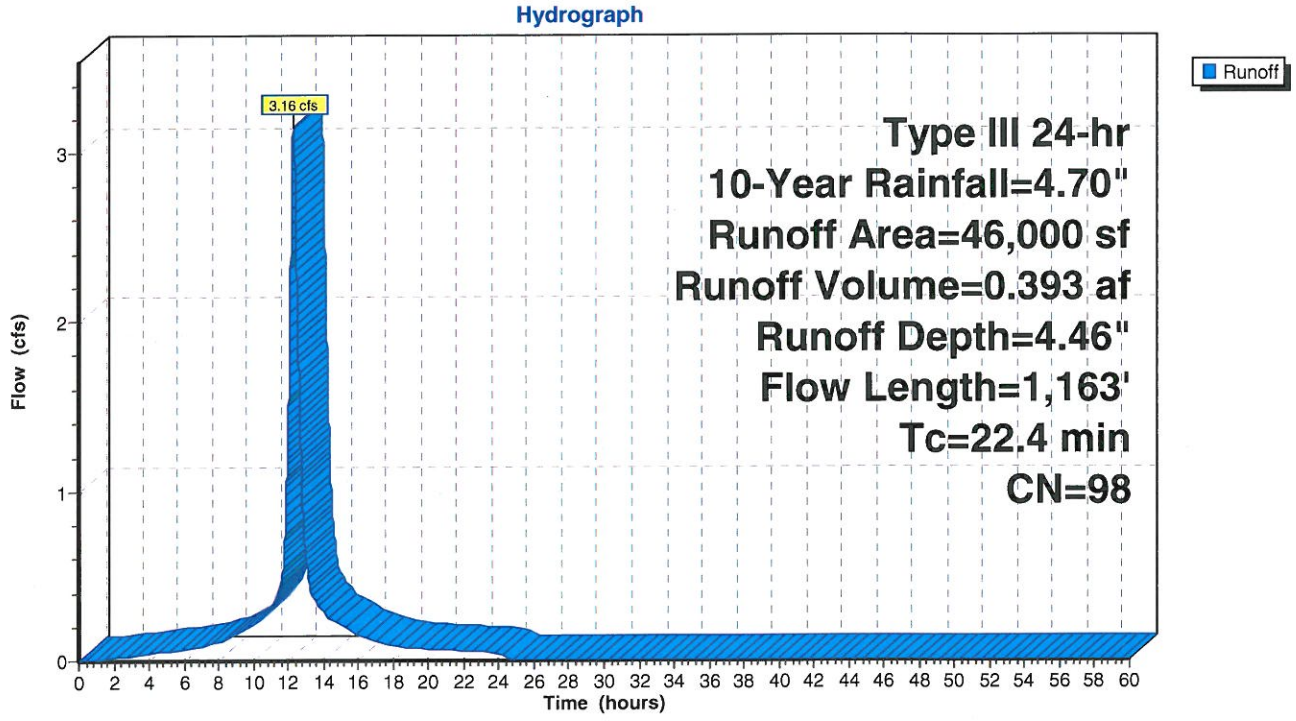
Runoff = 3.16 cfs @ 12.29 hrs, Volume= 0.393 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
46,000	98	Paved roads w/curbs & sewers, HSG D
46,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	30	0.0570	1.59		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
5.1	30	0.0100	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
1.3	40	0.5000	0.50		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
4.1	23	0.0100	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
11.6	1,040	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
22.4	1,163	Total			

Subcatchment 1C: Rte 1 Pvmt



Summary for Subcatchment 1D: Rte 1 @ 452+00

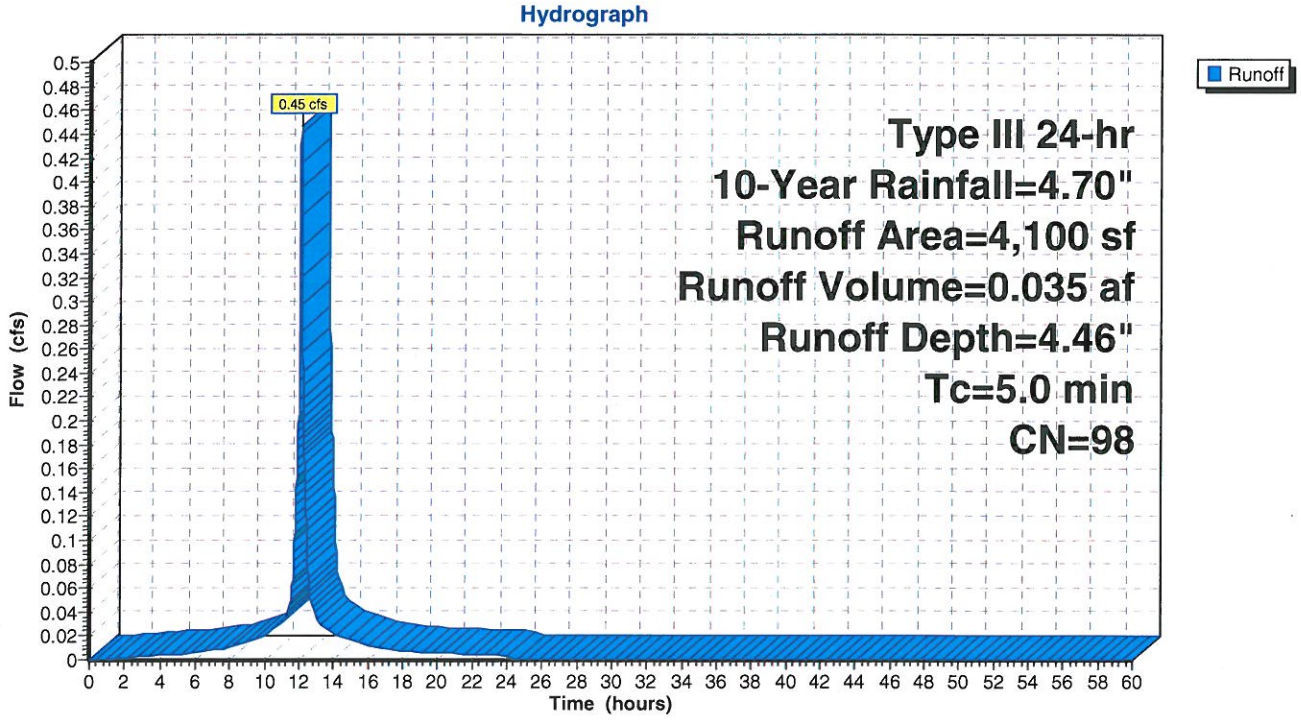
Runoff = 0.45 cfs @ 12.07 hrs, Volume= 0.035 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
*	4,100	98	Paved roads w/curbs & sewers, HSG C/D
	4,100		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1D: Rte 1 @ 452+00



Summary for Subcatchment 1E: Rte 1

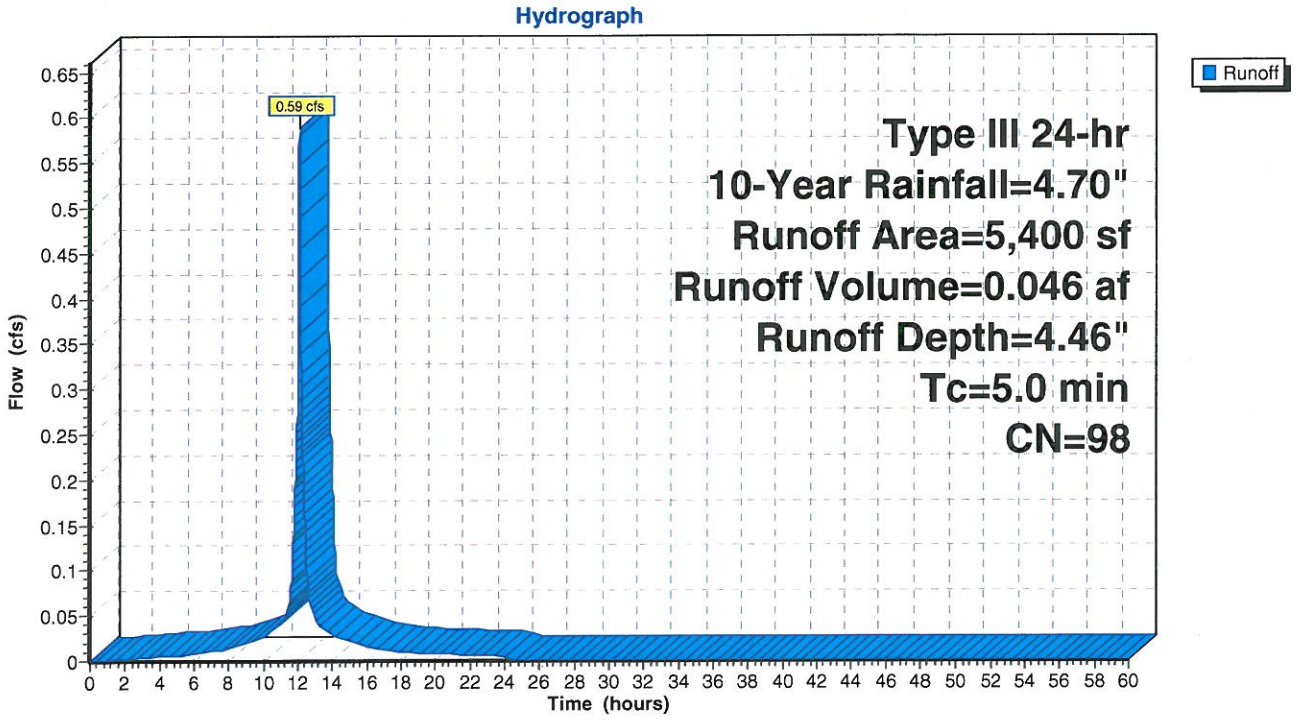
Runoff = 0.59 cfs @ 12.07 hrs, Volume= 0.046 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
5,400	98	Paved roads w/curbs & sewers, HSG D
5,400		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1E: Rte 1



Summary for Subcatchment 2A: NB Off Infield

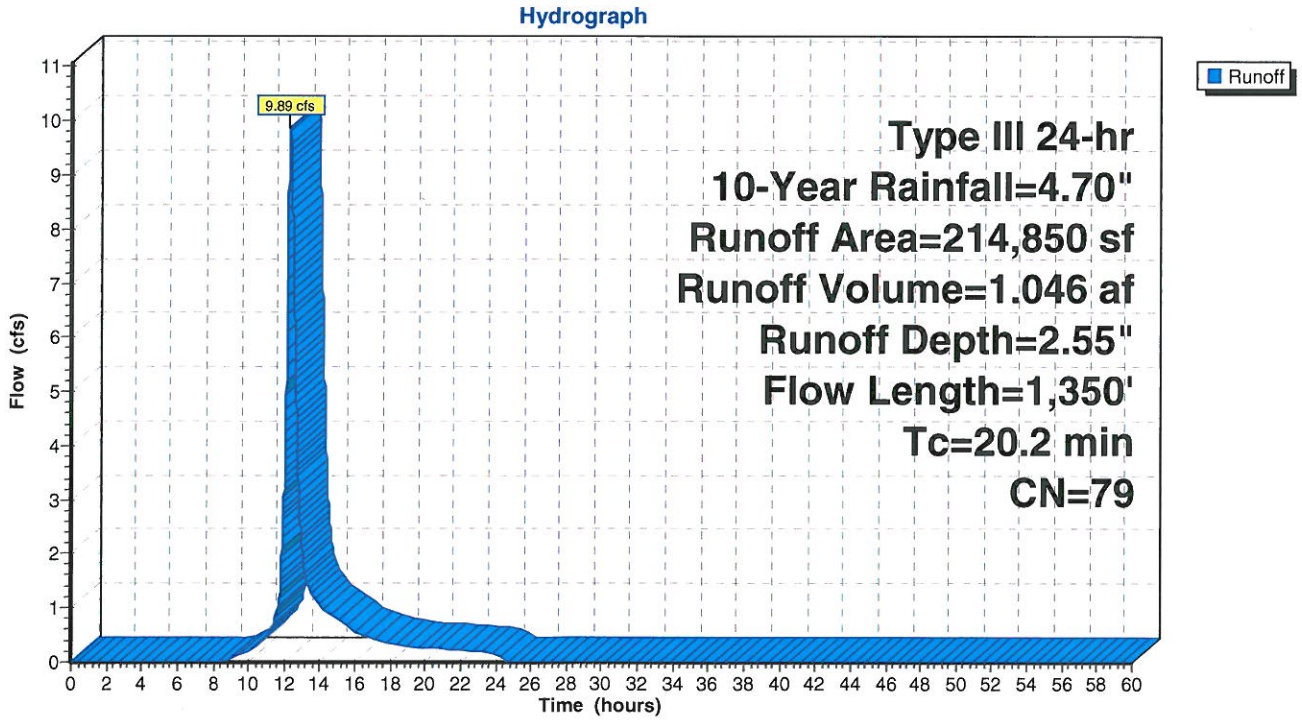
Runoff = 9.89 cfs @ 12.28 hrs, Volume= 1.046 af, Depth= 2.55"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
*	156,600	74	Woods, Good, HSG C/D
*	17,400	77	>75% Grass cover, Good, HSG C/D
	40,850	98	Paved roads w/curbs & sewers, HSG D
	214,850	79	Weighted Average
	174,000		80.99% Pervious Area
	40,850		19.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	100	0.0900	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
6.1	300	0.0271	0.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	950	0.0178	8.38	215.70	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=3.50' Z= 0.2 & 4.0 '/' Top.W=14.70' n= 0.030 Earth, grassed & winding
20.2	1,350	Total			

Subcatchment 2A: NB Off Infield



Summary for Subcatchment 2B: NB Off Ramp Infield

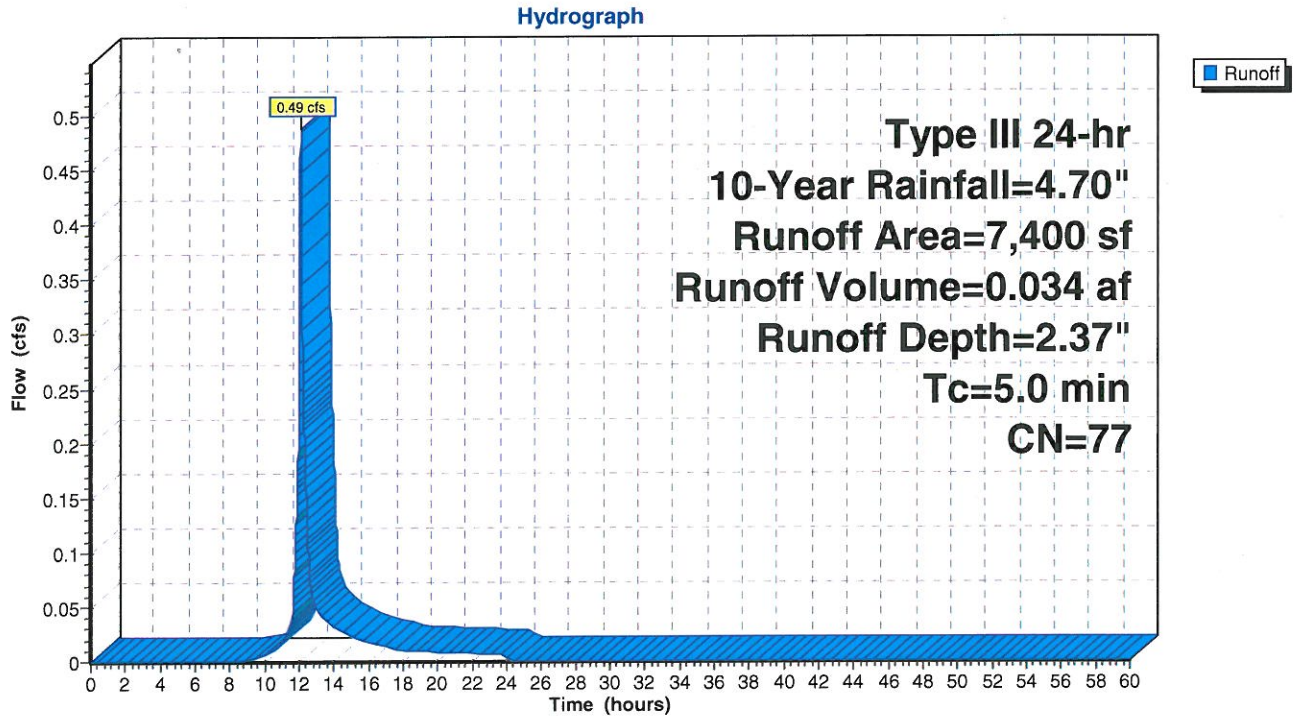
Runoff = 0.49 cfs @ 12.08 hrs, Volume= 0.034 af, Depth= 2.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
*	7,400	77	>75% Grass cover, Good, HSG C/D
	7,400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2B: NB Off Ramp Infield



Summary for Subcatchment 2C: I-295 NB/Ramps Infield

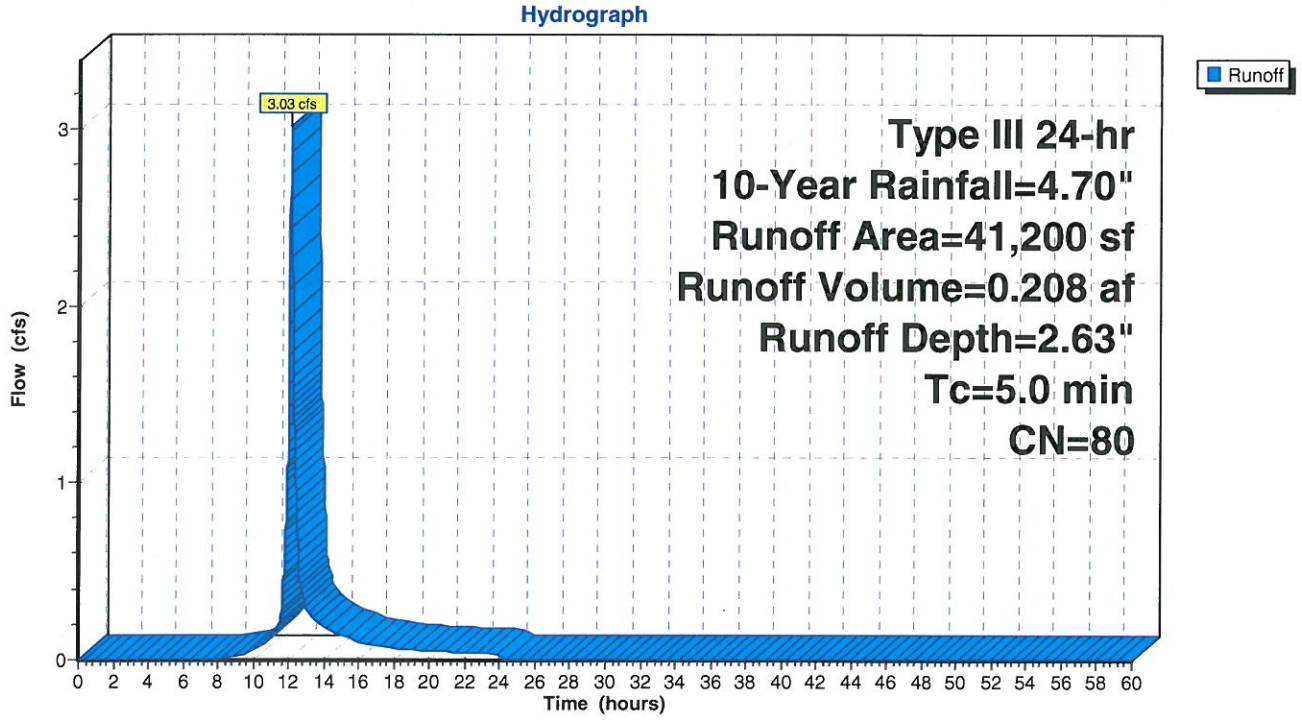
Runoff = 3.03 cfs @ 12.07 hrs, Volume= 0.208 af, Depth= 2.63"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
*	26,400	76	>75% Grass cover, Good, HSG C/D
*	6,600	74	Woods, Good, HSG C/D
	8,200	98	Paved roads w/curbs & sewers, HSG D
	41,200	80	Weighted Average
	33,000		80.10% Pervious Area
	8,200		19.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2C: I-295 NB/Ramps Infield



Summary for Subcatchment 2D: I-295 NB/Ramps Infield

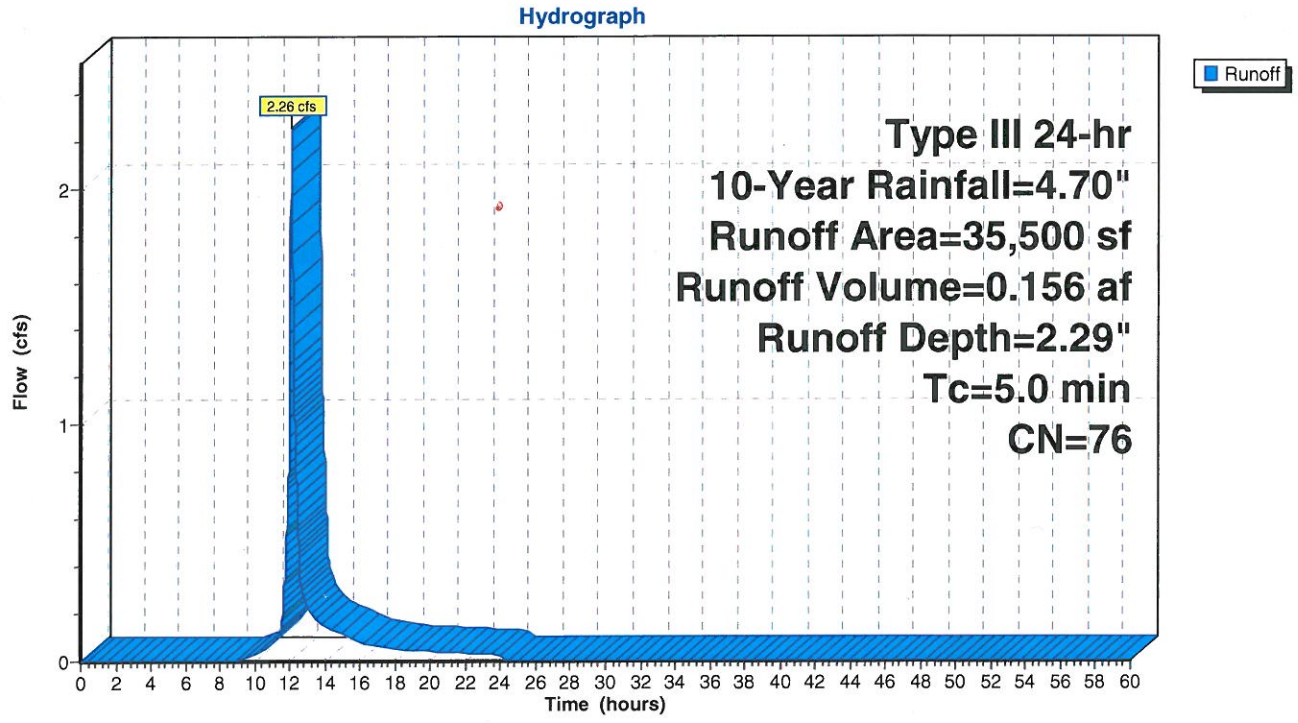
Runoff = 2.26 cfs @ 12.08 hrs, Volume= 0.156 af, Depth= 2.29"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
*	28,400	77	>75% Grass cover, Good, HSG C/D
*	7,100	74	Woods, Good, HSG C/D
	35,500	76	Weighted Average
	35,500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2D: I-295 NB/Ramps Infield



Summary for Subcatchment 3A: Outside Ramp

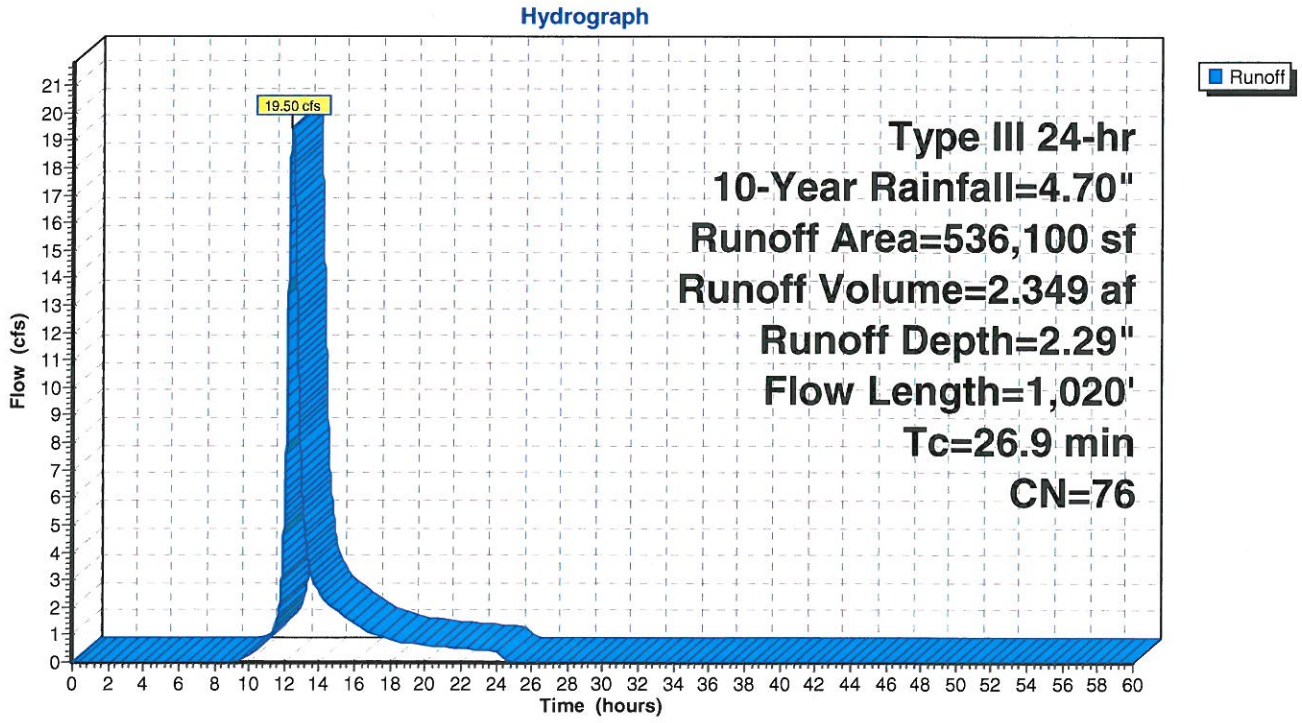
Runoff = 19.50 cfs @ 12.38 hrs, Volume= 2.349 af, Depth= 2.29"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
*	408,800	74	Woods, Good, HSG C/D
*	102,200	76	>75% Grass cover, Good, HSG C/D
*	25,100	98	Paved roads w/curbs & sewers, HSG C/D
	536,100	76	Weighted Average
	511,000		95.32% Pervious Area
	25,100		4.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0453	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
10.2	650	0.0453	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	270	0.0128	6.26	117.29	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=2.50' Z= 2.0 & 4.0 '/' Top.W=15.00' n= 0.030 Earth, grassed & winding
26.9	1,020	Total			

Subcatchment 3A: Outside Ramp



Summary for Subcatchment 3B: NB On 211+00

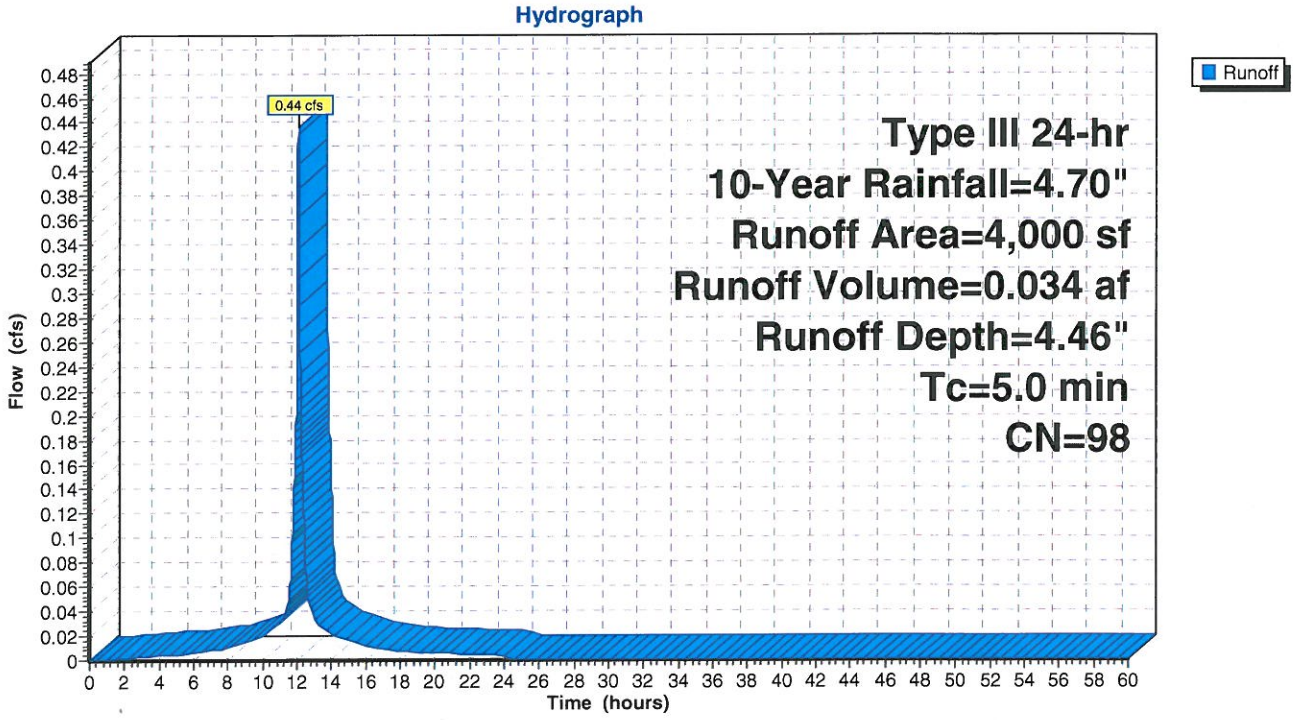
Runoff = 0.44 cfs @ 12.07 hrs, Volume= 0.034 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
*	4,000	98	Paved roads w/curbs & sewers, HSG C/D
	4,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 3B: NB On 211+00



Summary for Subcatchment 3C: NB Off Infield @ 208+00

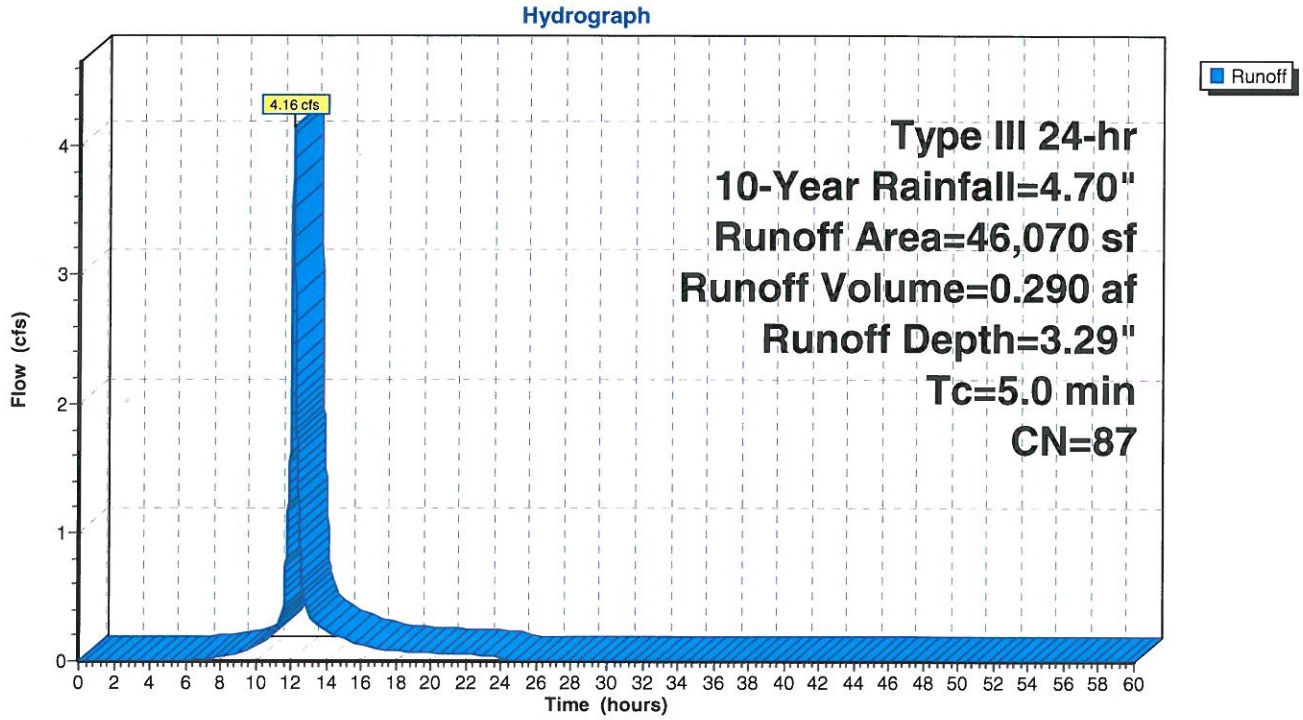
Runoff = 4.16 cfs @ 12.07 hrs, Volume= 0.290 af, Depth= 3.29"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
*	18,800	76	>75% Grass cover, Good, HSG C/D
*	4,700	74	Woods, Good, HSG C/D
*	13,400	98	Paved roads w/curbs & sewers, HSG C/D
*	9,170	98	Paved roads w/curbs & sewers, HSG C/D
	46,070	87	Weighted Average
	23,500		51.01% Pervious Area
	22,570		48.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 3C: NB Off Infield @ 208+00



Summary for Subcatchment 3D: NB On 204+50

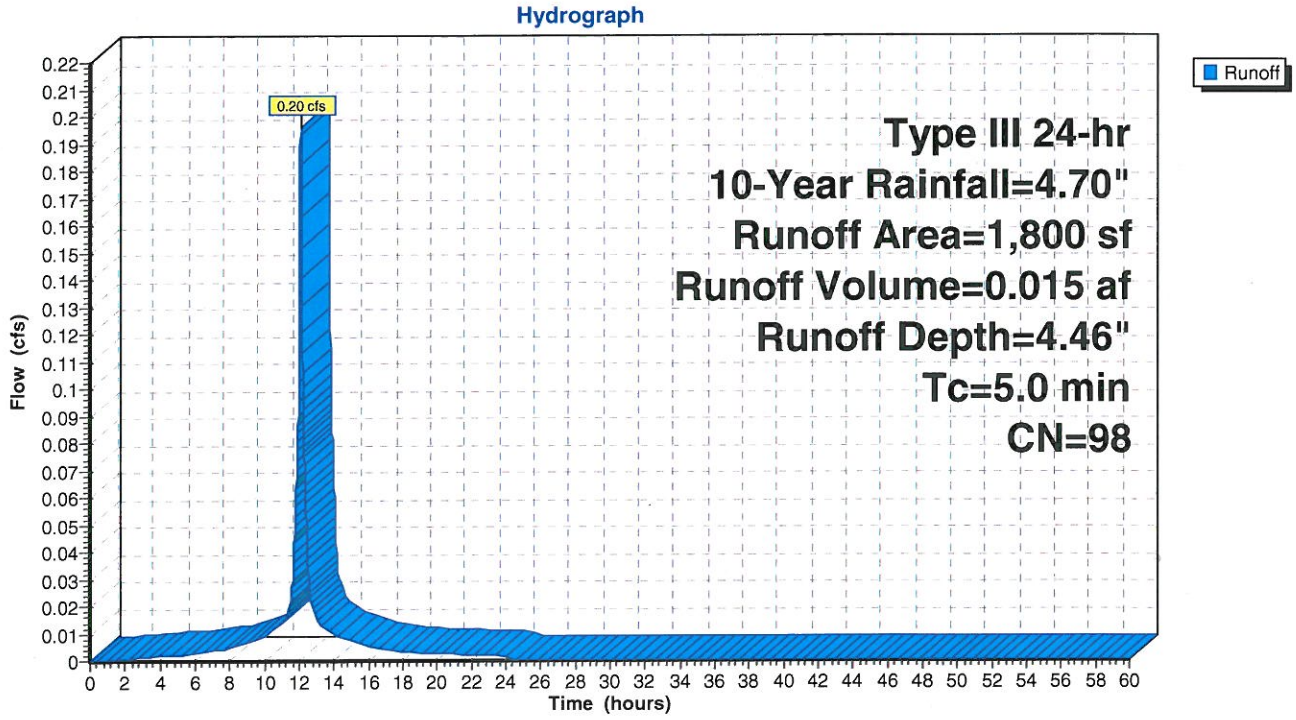
Runoff = 0.20 cfs @ 12.07 hrs, Volume= 0.015 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
*	1,800	98	Paved roads w/curbs & sewers, HSG C/D
	1,800		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 3D: NB On 204+50



Summary for Subcatchment 4A: Trib to 18" South of Park & Ride

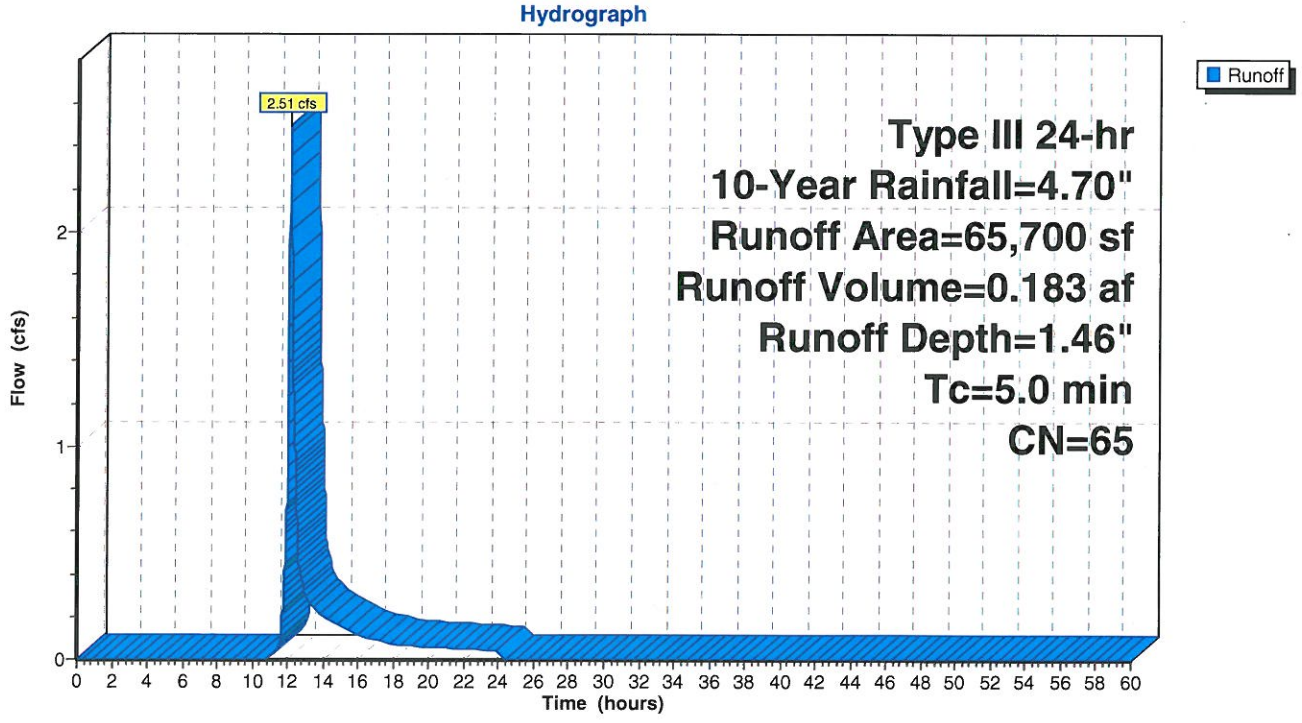
Runoff = 2.51 cfs @ 12.08 hrs, Volume= 0.183 af, Depth= 1.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
22,425	55	Woods, Good, HSG B
7,475	70	Woods, Good, HSG C
22,425	61	>75% Grass cover, Good, HSG B
7,475	74	>75% Grass cover, Good, HSG C
5,900	98	Paved roads w/curbs & sewers, HSG B
65,700	65	Weighted Average
59,800		91.02% Pervious Area
5,900		8.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 4A: Trib to 18" South of Park & Ride



Summary for Subcatchment 4B: Trib to 18" South of Park & Ride

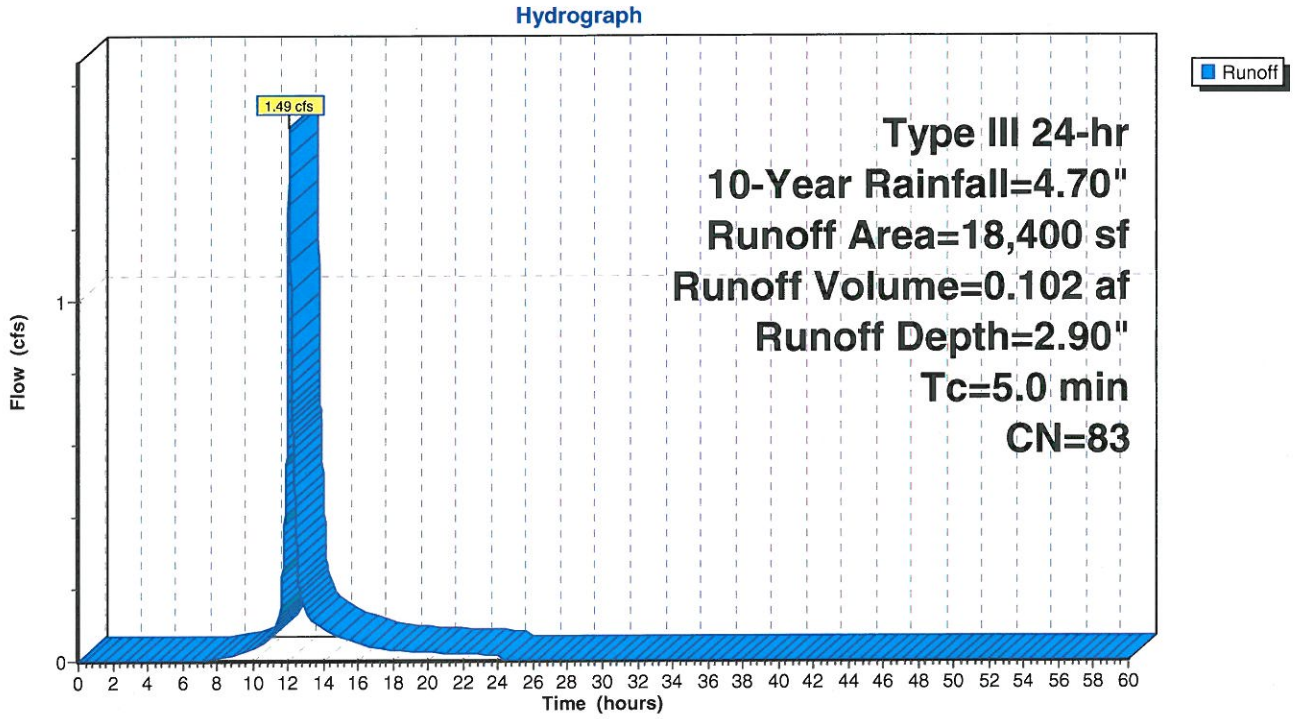
Runoff = 1.49 cfs @ 12.07 hrs, Volume= 0.102 af, Depth= 2.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
*	5,000	74	Woods, Good, HSG C/D
*	7,500	77	>75% Grass cover, Good, HSG C/D
	5,900	98	Paved roads w/curbs & sewers, HSG D
	18,400	83	Weighted Average
	12,500		67.93% Pervious Area
	5,900		32.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 4B: Trib to 18" South of Park & Ride



Summary for Subcatchment 4C: SB On/Park & Ride Infield

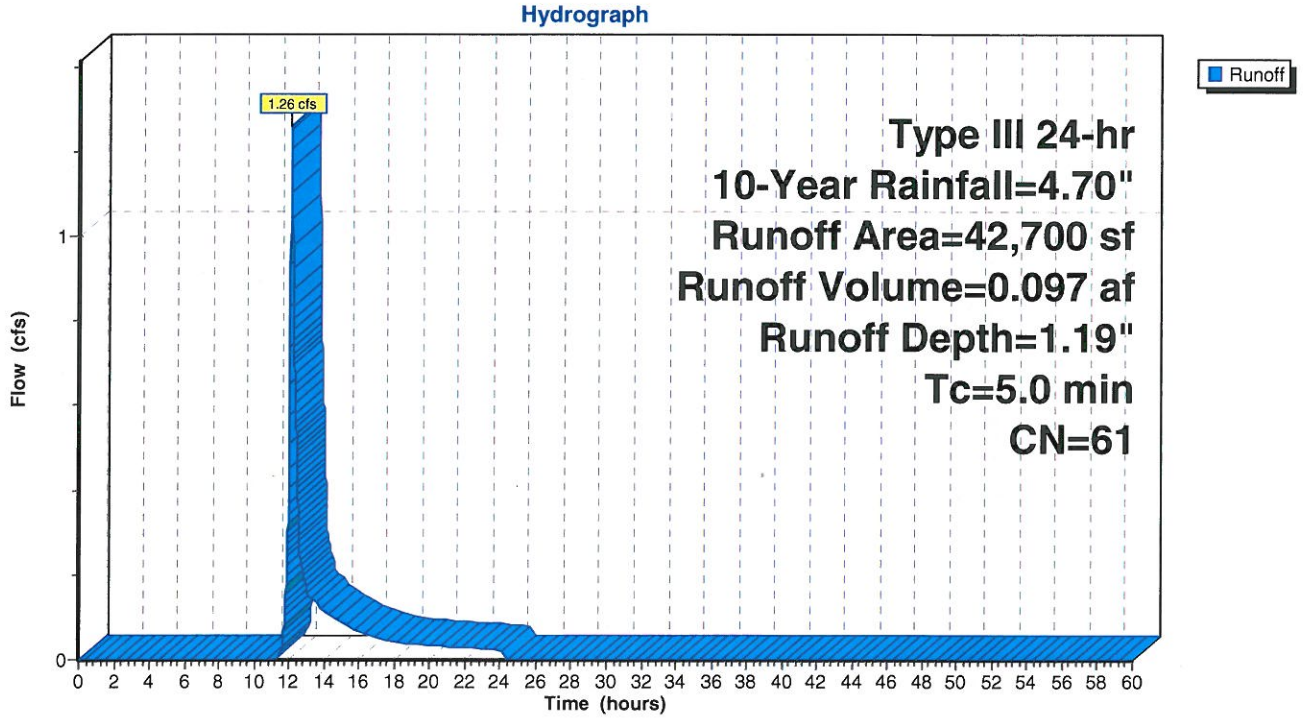
Runoff = 1.26 cfs @ 12.09 hrs, Volume= 0.097 af, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
42,700	61	>75% Grass cover, Good, HSG B
42,700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 4C: SB On/Park & Ride Infield



Summary for Subcatchment 4D: North of Park & Ride Entrance

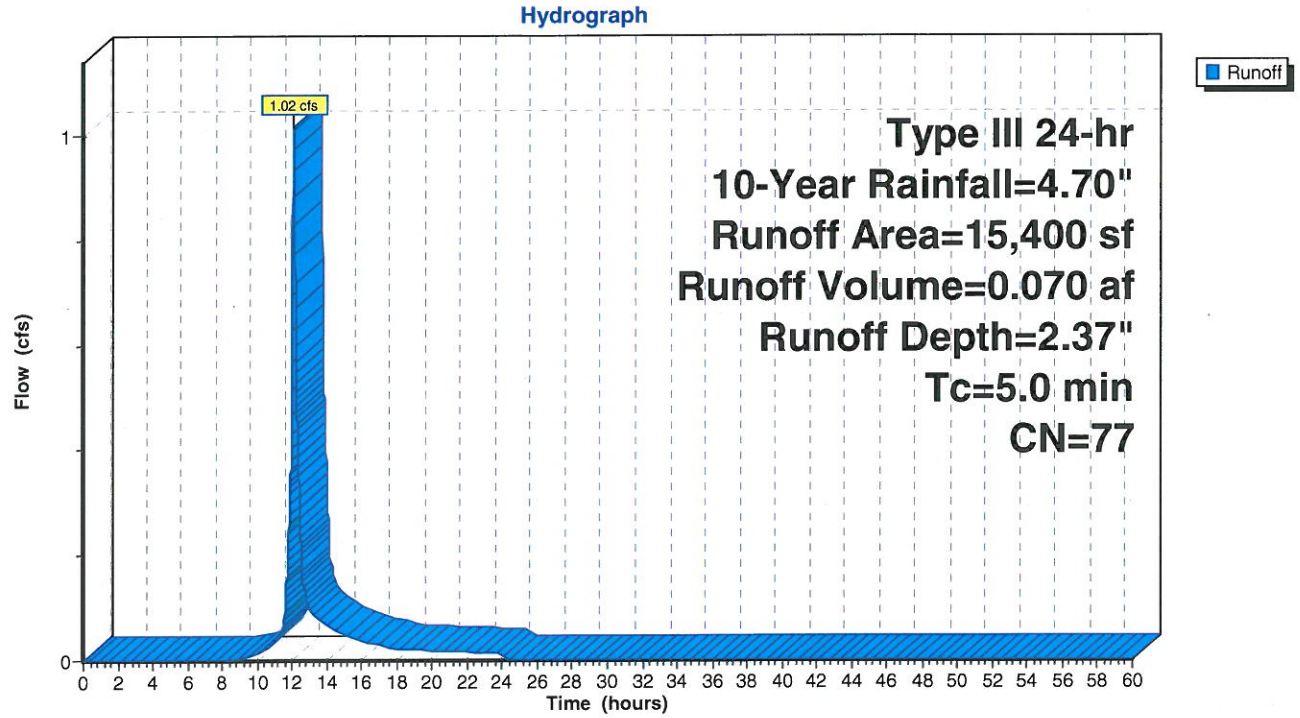
Runoff = 1.02 cfs @ 12.08 hrs, Volume= 0.070 af, Depth= 2.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
8,700	61	>75% Grass cover, Good, HSG B
6,700	98	Paved roads w/curbs & sewers, HSG B
15,400	77	Weighted Average
8,700		56.49% Pervious Area
6,700		43.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 4D: North of Park & Ride Entrance



Summary for Subcatchment 4E: SB On/Park & Ride Infield

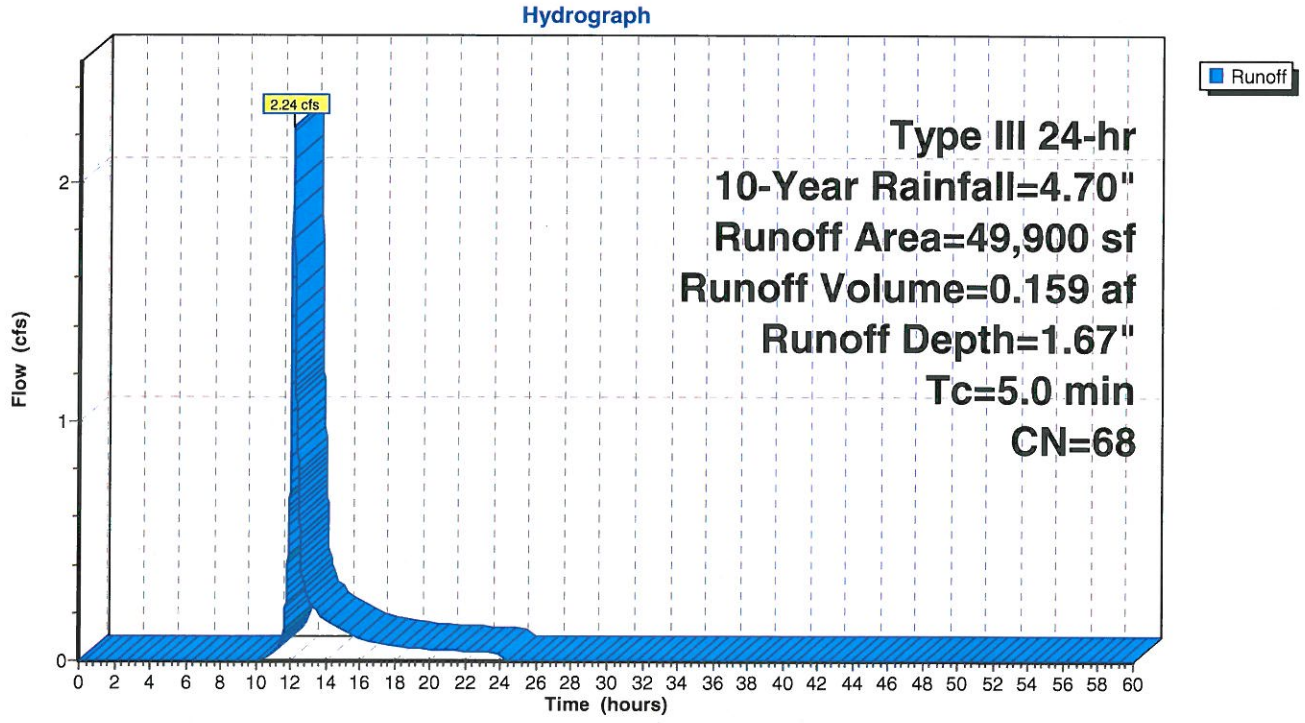
Runoff = 2.24 cfs @ 12.08 hrs, Volume= 0.159 af, Depth= 1.67"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
27,225	55	Woods, Good, HSG B
9,075	61	>75% Grass cover, Good, HSG B
13,600	98	Paved roads w/curbs & sewers, HSG B
49,900	68	Weighted Average
36,300		72.75% Pervious Area
13,600		27.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 4E: SB On/Park & Ride Infield



Summary for Subcatchment 7: Catchment #7

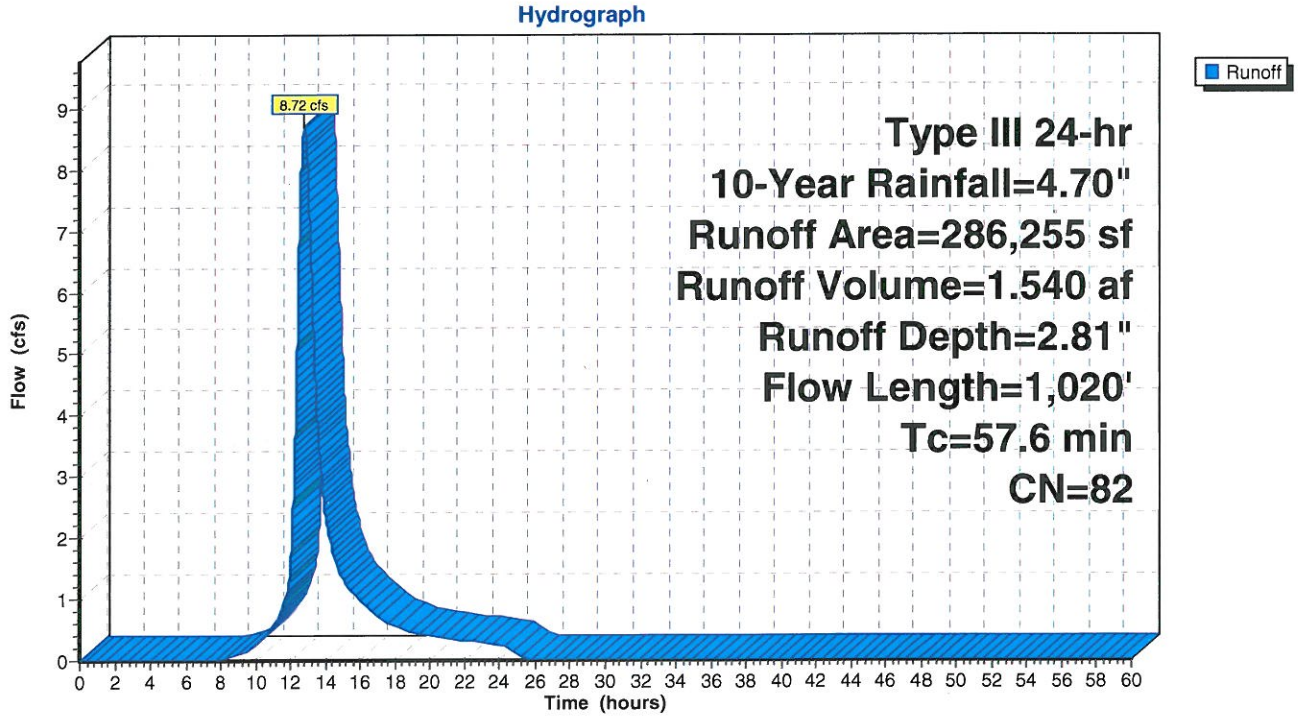
Runoff = 8.72 cfs @ 12.74 hrs, Volume= 1.540 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
	92,118	98	Paved roads w/curbs & sewers
*	59,506	77	>75% Grass cover, Good, HSG C/D
*	134,631	74	Woods, Good, HSG C/D
	286,255	82	Weighted Average
	194,137		67.82% Pervious Area
	92,118		32.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0400	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
2.9	620	0.0130	3.51	16.48	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=1.00' Z= 4.7 '/' Top.W=9.40' n= 0.030 Short grass
37.9	300	0.0473	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
57.6	1,020	Total			

Subcatchment 7: Catchment #7



Summary for Subcatchment 8: Catchment #8

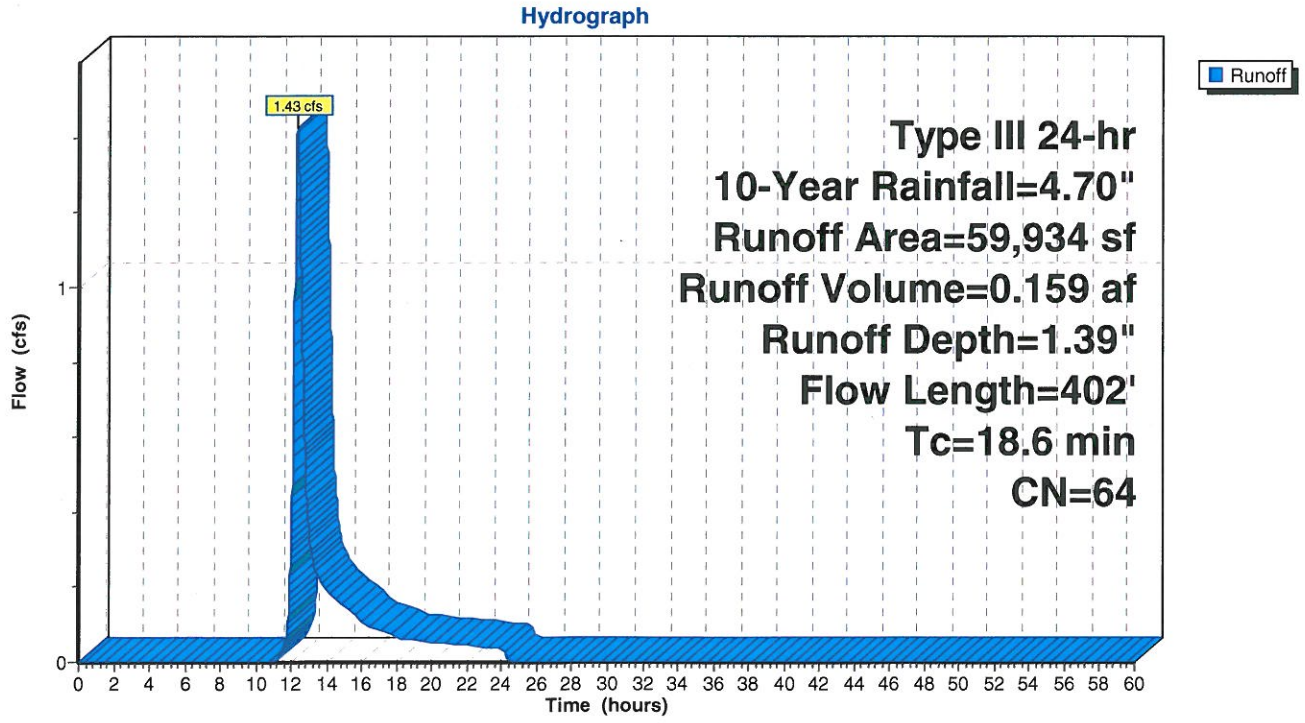
Runoff = 1.43 cfs @ 12.28 hrs, Volume= 0.159 af, Depth= 1.39"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
	7,990	98	Paved roads w/curbs & sewers
	14,151	61	>75% Grass cover, Good, HSG B
	31,953	55	Woods, Good, HSG B
	48	98	Paved roads w/curbs & sewers
*	4,120	77	>75% Grass cover, Good, HSG C/D
*	1,672	74	Woods, Good, HSG C/D
	59,934	64	Weighted Average
	51,896		86.59% Pervious Area
	8,038		13.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1900	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
9.6	302	0.0111	0.53		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.6	402	Total			

Subcatchment 8: Catchment #8



Summary for Subcatchment 10: Catchment #10

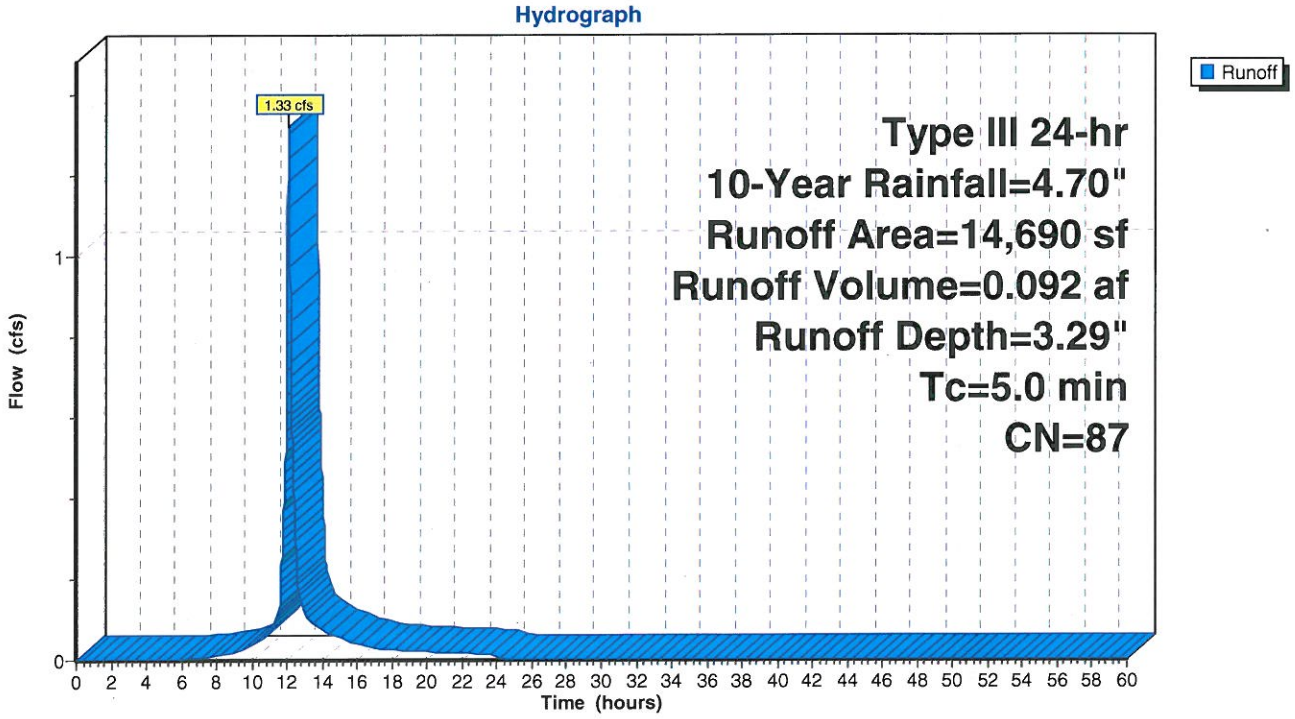
Runoff = 1.33 cfs @ 12.07 hrs, Volume= 0.092 af, Depth= 3.29"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
	7,070	98	Paved roads w/curbs & sewers
*	5,432	77	>75% Grass cover, Good, HSG C/D
*	2,188	74	Woods, Good, HSG C/D
	14,690	87	Weighted Average
	7,620		51.87% Pervious Area
	7,070		48.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 10: Catchment #10



Summary for Subcatchment 11: Catchment #11

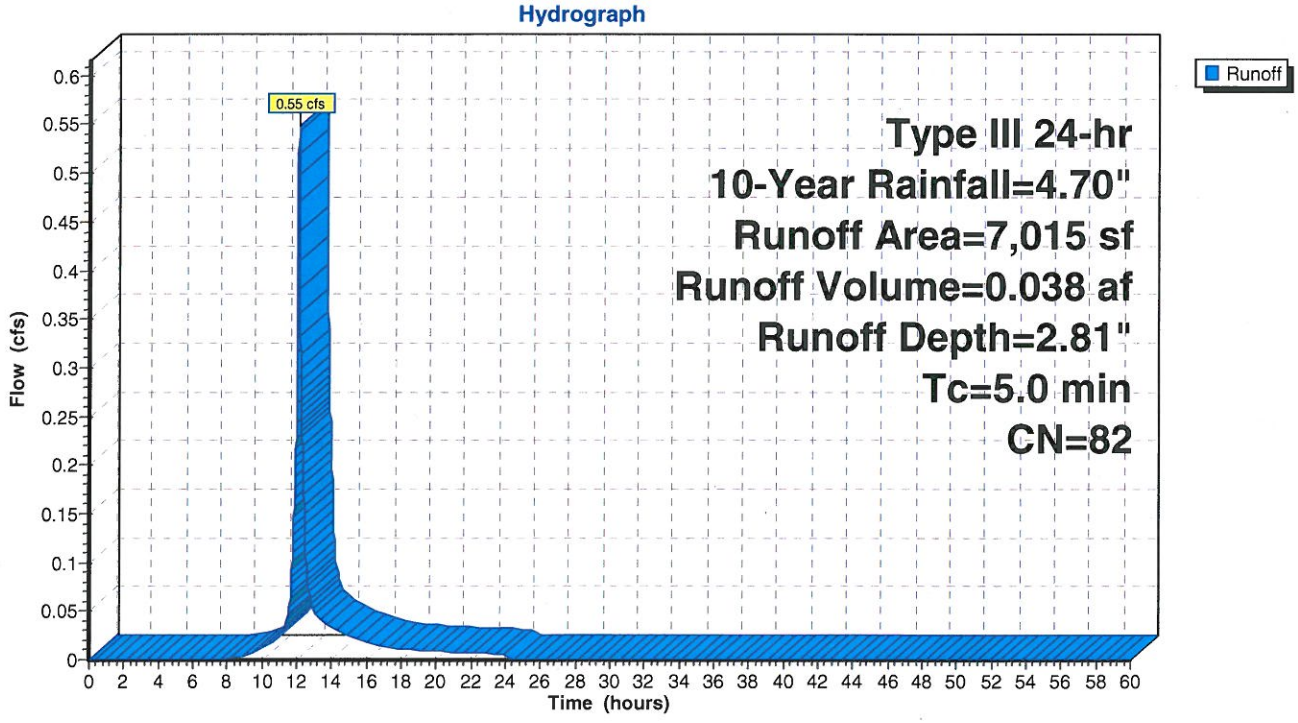
Runoff = 0.55 cfs @ 12.07 hrs, Volume= 0.038 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
	1,823	98	Paved roads w/curbs & sewers
*	3,661	77	>75% Grass cover, Good, HSG C/D
*	1,531	74	Woods, Good, HSG C/D
	7,015	82	Weighted Average
	5,192		74.01% Pervious Area
	1,823		25.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 11: Catchment #11



Summary for Subcatchment 12: Catchment #12

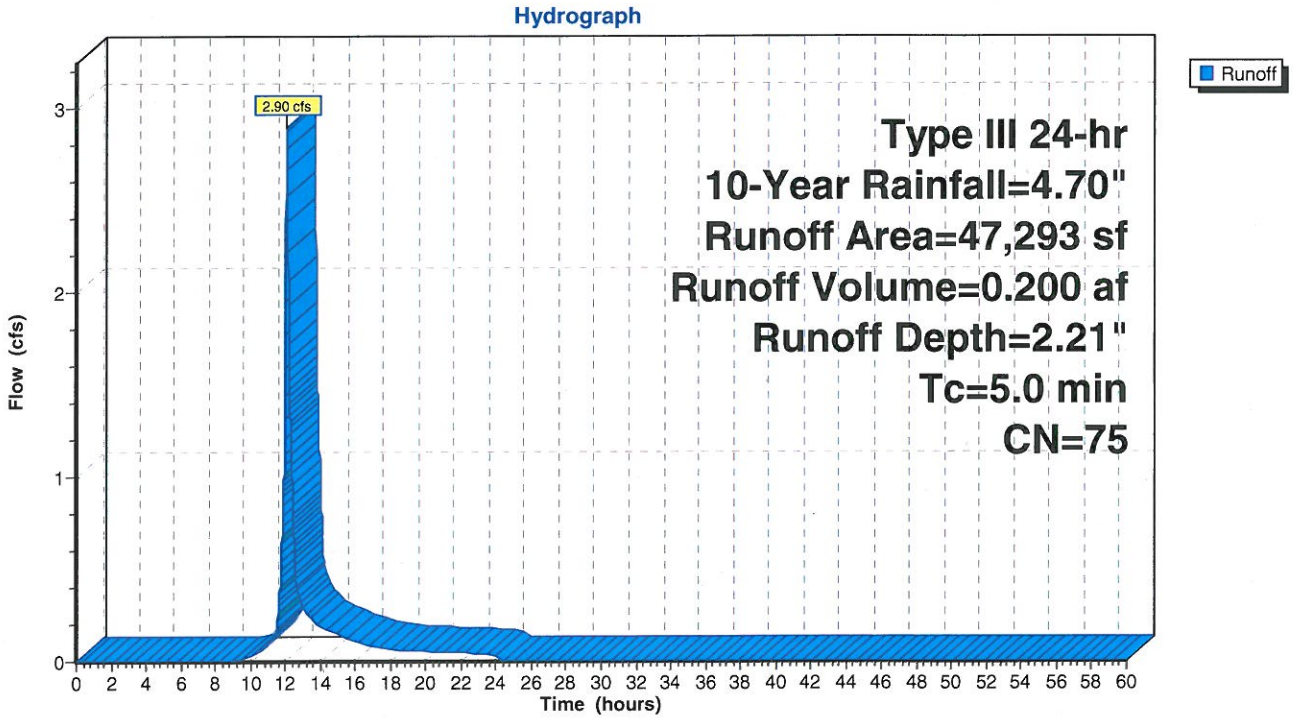
Runoff = 2.90 cfs @ 12.08 hrs, Volume= 0.200 af, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
	14,549	98	Paved roads w/curbs & sewers
	6,878	61	>75% Grass cover, Good, HSG B
	16,049	55	Woods, Good, HSG B
	3,700	98	Paved roads w/curbs & sewers
*	4,282	77	>75% Grass cover, Good, HSG C/D
*	1,835	74	Woods, Good, HSG C/D
	47,293	75	Weighted Average
	29,044		61.41% Pervious Area
	18,249		38.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 12: Catchment #12



Summary for Reach 2R: 24" under NB Off

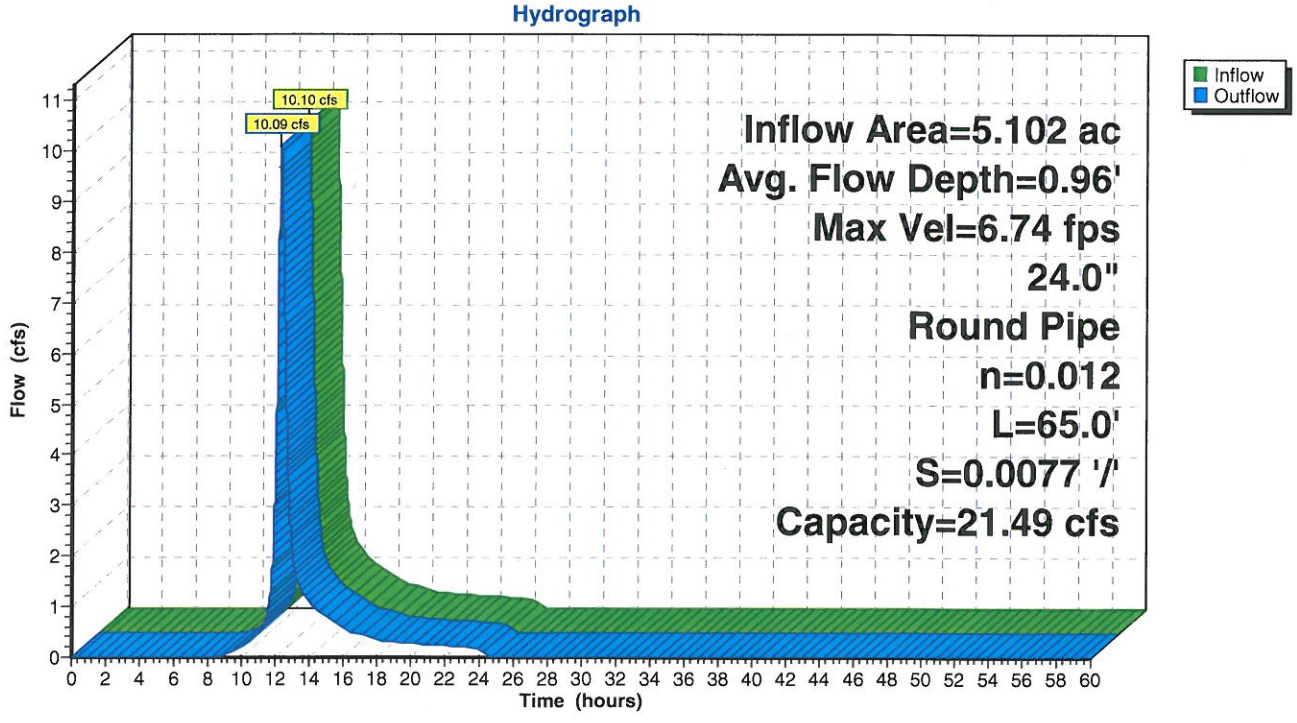
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 5.102 ac, 18.38% Impervious, Inflow Depth = 2.54" for 10-Year event
Inflow = 10.10 cfs @ 12.28 hrs, Volume= 1.080 af
Outflow = 10.09 cfs @ 12.28 hrs, Volume= 1.080 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.74 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.67 fps, Avg. Travel Time= 0.4 min

Peak Storage= 97 cf @ 12.28 hrs
Average Depth at Peak Storage= 0.96'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 21.49 cfs

24.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 65.0' Slope= 0.0077 '/'
Inlet Invert= 114.00', Outlet Invert= 113.50'



Summary for Reach 3AR: 24" under NB On

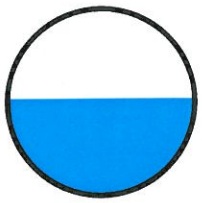
[52] Hint: Inlet/Outlet conditions not evaluated

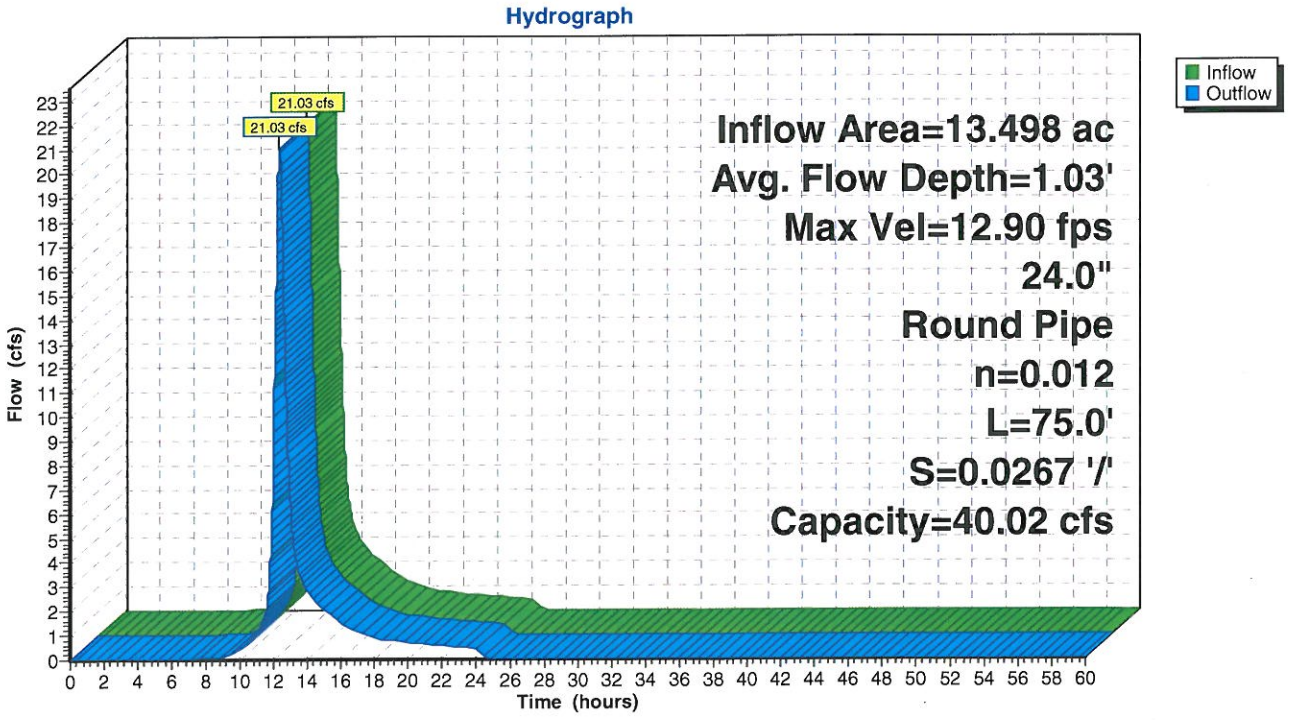
Inflow Area = 13.498 ac, 9.09% Impervious, Inflow Depth = 2.39" for 10-Year event
Inflow = 21.03 cfs @ 12.37 hrs, Volume= 2.688 af
Outflow = 21.03 cfs @ 12.37 hrs, Volume= 2.688 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 12.90 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.21 fps, Avg. Travel Time= 0.3 min

Peak Storage= 122 cf @ 12.37 hrs
Average Depth at Peak Storage= 1.03'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 40.02 cfs

24.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 75.0' Slope= 0.0267 '/'
Inlet Invert= 119.00', Outlet Invert= 117.00'





Summary for Reach 3BR: 18"

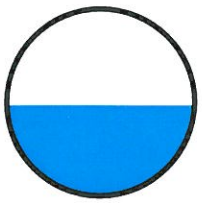
[52] Hint: Inlet/Outlet conditions not evaluated

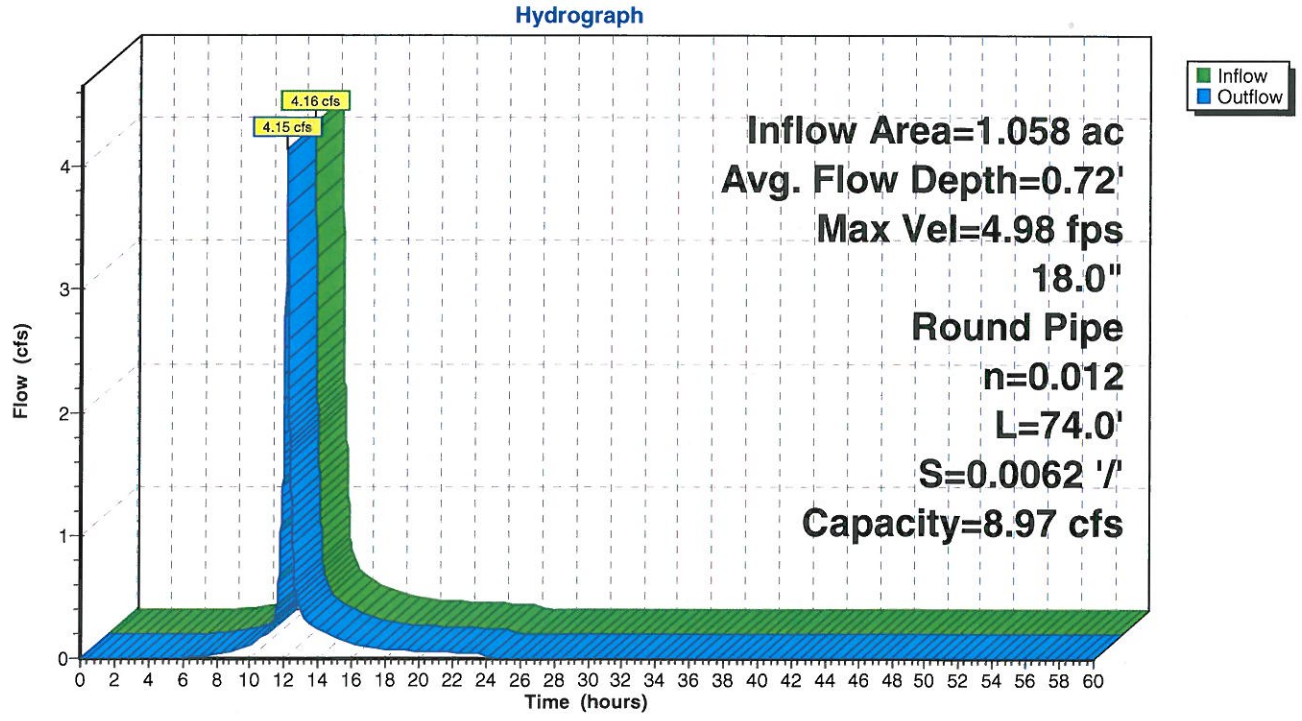
Inflow Area = 1.058 ac, 48.99% Impervious, Inflow Depth = 3.29" for 10-Year event
Inflow = 4.16 cfs @ 12.07 hrs, Volume= 0.290 af
Outflow = 4.15 cfs @ 12.08 hrs, Volume= 0.290 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.98 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.68 fps, Avg. Travel Time= 0.7 min

Peak Storage= 62 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.72'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.97 cfs

18.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 74.0' Slope= 0.0062 '/'
Inlet Invert= 126.00', Outlet Invert= 125.54'





Summary for Reach 4AR: 24" under SB On Ramp

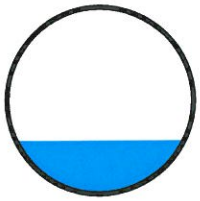
[52] Hint: Inlet/Outlet conditions not evaluated

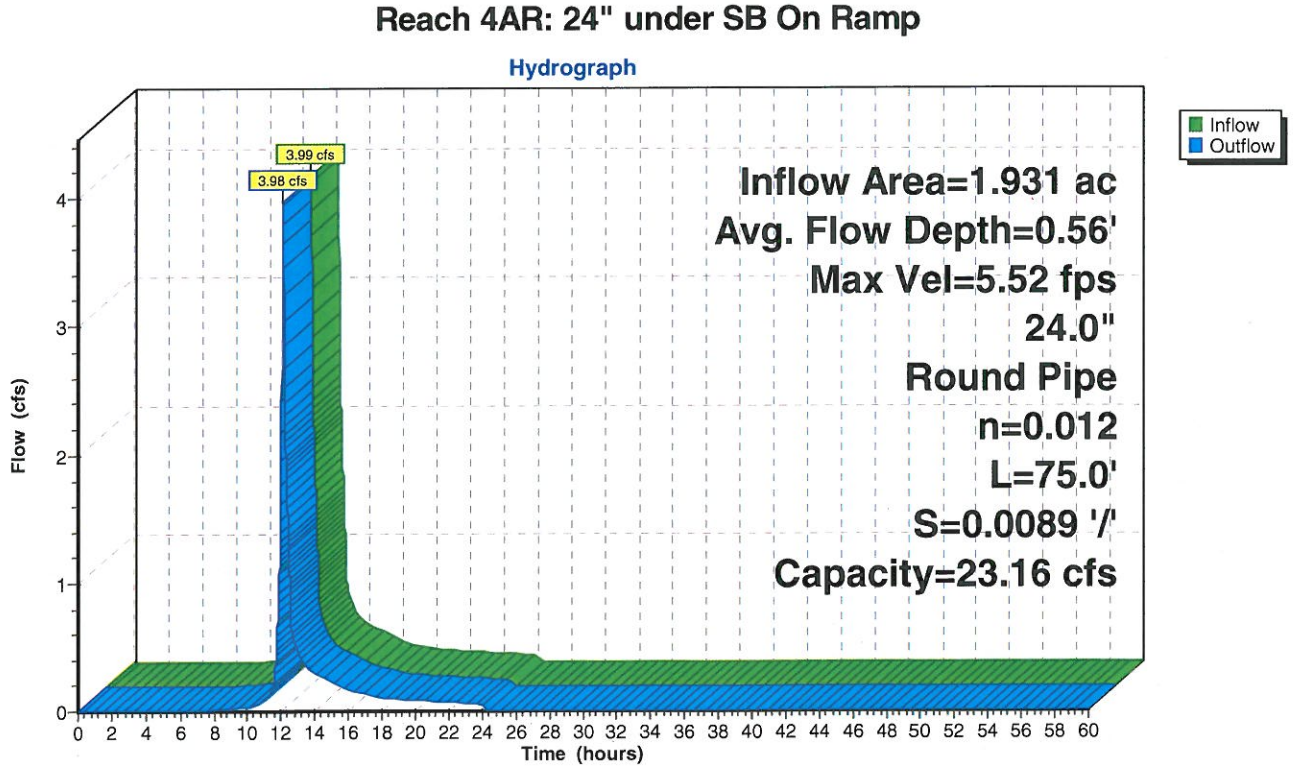
Inflow Area = 1.931 ac, 14.03% Impervious, Inflow Depth = 1.77" for 10-Year event
Inflow = 3.99 cfs @ 12.08 hrs, Volume= 0.285 af
Outflow = 3.98 cfs @ 12.09 hrs, Volume= 0.285 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.52 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.87 fps, Avg. Travel Time= 0.7 min

Peak Storage= 54 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.56'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 23.16 cfs

24.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 75.0' Slope= 0.0089 '/'
Inlet Invert= 120.13', Outlet Invert= 119.46'





Summary for Reach 4BR: 18"

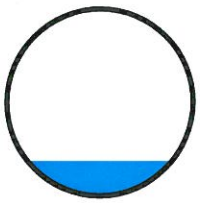
[52] Hint: Inlet/Outlet conditions not evaluated

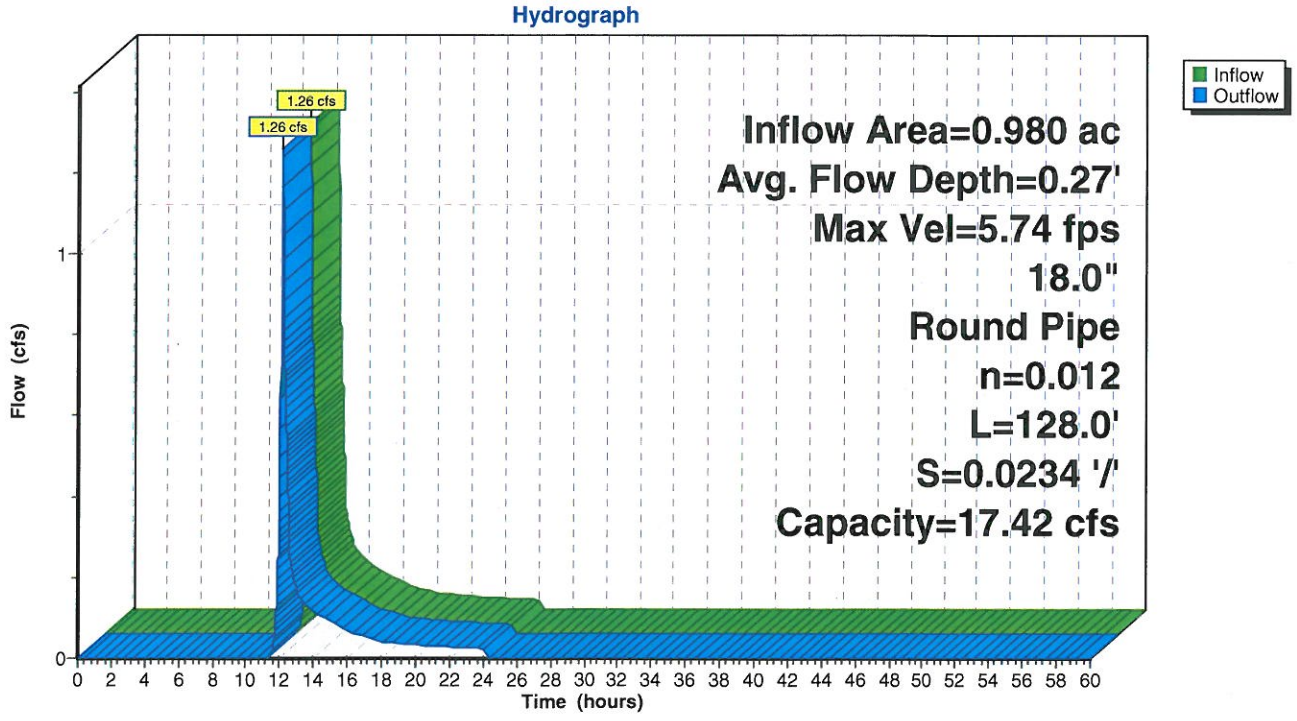
Inflow Area = 0.980 ac, 0.00% Impervious, Inflow Depth = 1.19" for 10-Year event
Inflow = 1.26 cfs @ 12.09 hrs, Volume= 0.097 af
Outflow = 1.26 cfs @ 12.10 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.74 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 2.30 fps, Avg. Travel Time= 0.9 min

Peak Storage= 28 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.42 cfs

18.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 128.0' Slope= 0.0234 '/'
Inlet Invert= 121.00', Outlet Invert= 118.00'





Summary for Reach 4CR: 18" @ SB On Entrance

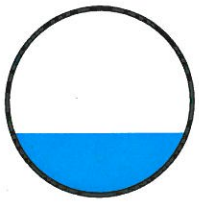
[52] Hint: Inlet/Outlet conditions not evaluated

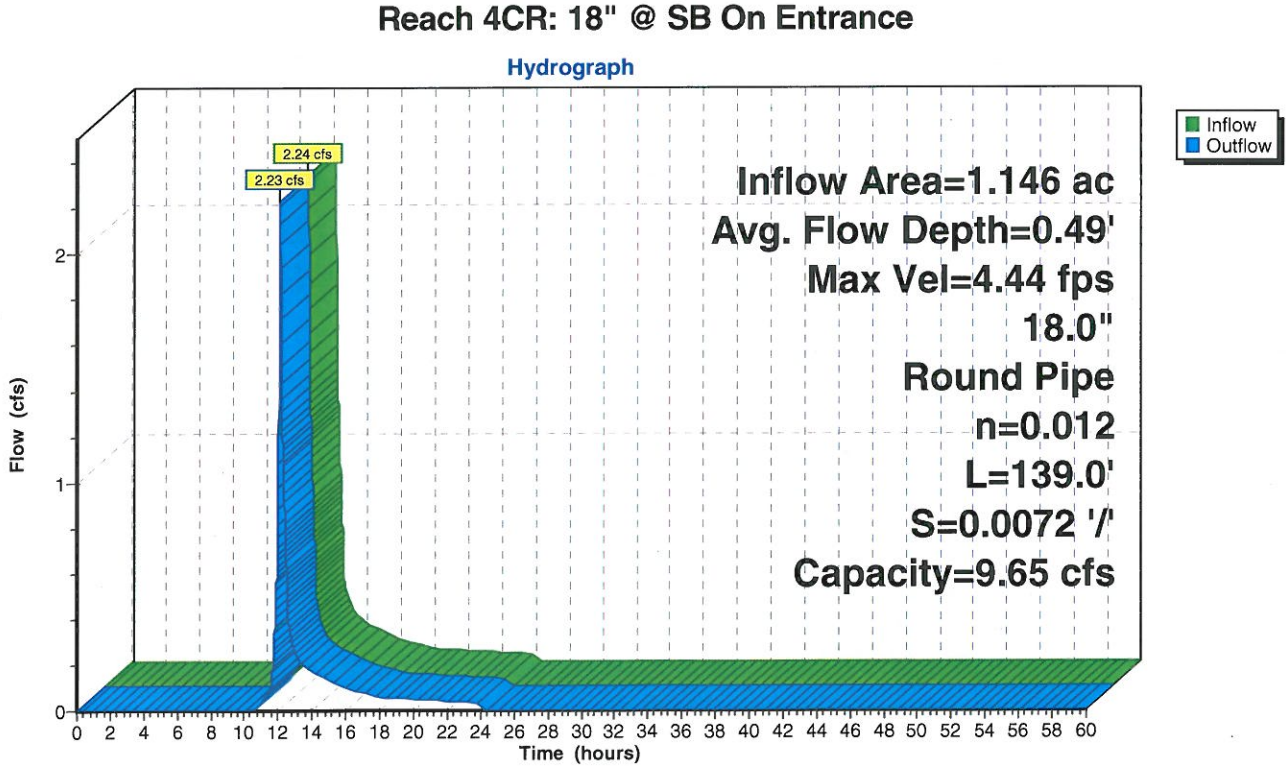
Inflow Area = 1.146 ac, 27.25% Impervious, Inflow Depth = 1.67" for 10-Year event
Inflow = 2.24 cfs @ 12.08 hrs, Volume= 0.159 af
Outflow = 2.23 cfs @ 12.10 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.44 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.67 fps, Avg. Travel Time= 1.4 min

Peak Storage= 70 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.49'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 9.65 cfs

18.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 139.0' Slope= 0.0072 '/'
Inlet Invert= 122.00', Outlet Invert= 121.00'





Summary for Pond 1AP: Median CB @ 448+50

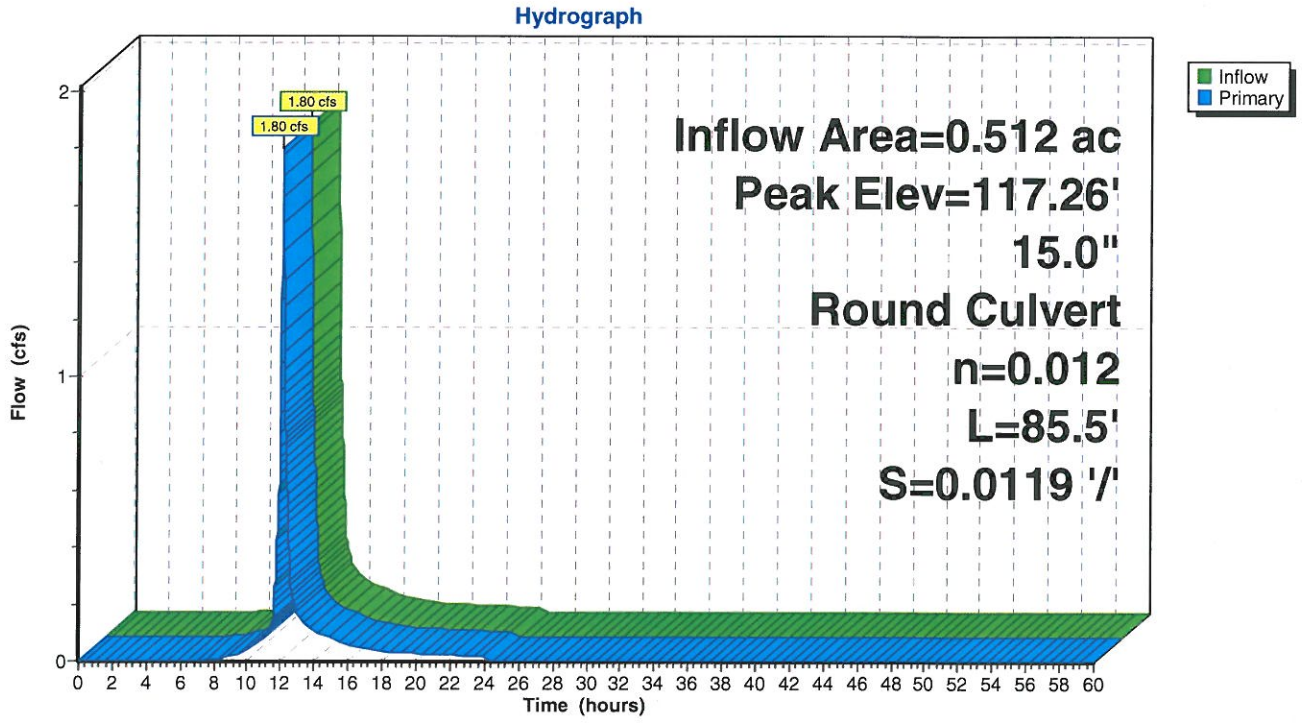
Inflow Area = 0.512 ac, 52.02% Impervious, Inflow Depth = 2.90" for 10-Year event
Inflow = 1.80 cfs @ 12.07 hrs, Volume= 0.124 af
Outflow = 1.80 cfs @ 12.07 hrs, Volume= 0.124 af, Atten= 0%, Lag= 0.0 min
Primary = 1.80 cfs @ 12.07 hrs, Volume= 0.124 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 117.26' @ 12.07 hrs
Flood Elev= 120.73'

Device	Routing	Invert	Outlet Devices
#1	Primary	116.60'	**15.0" Round Culvert** L= 85.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 116.60' / 115.58' S= 0.0119 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=1.80 cfs @ 12.07 hrs HW=117.26' (Free Discharge)
1=Culvert (Inlet Controls 1.80 cfs @ 2.76 fps)

Pond 1AP: Median CB @ 448+50



Summary for Pond 1BP: CB @ 450+00

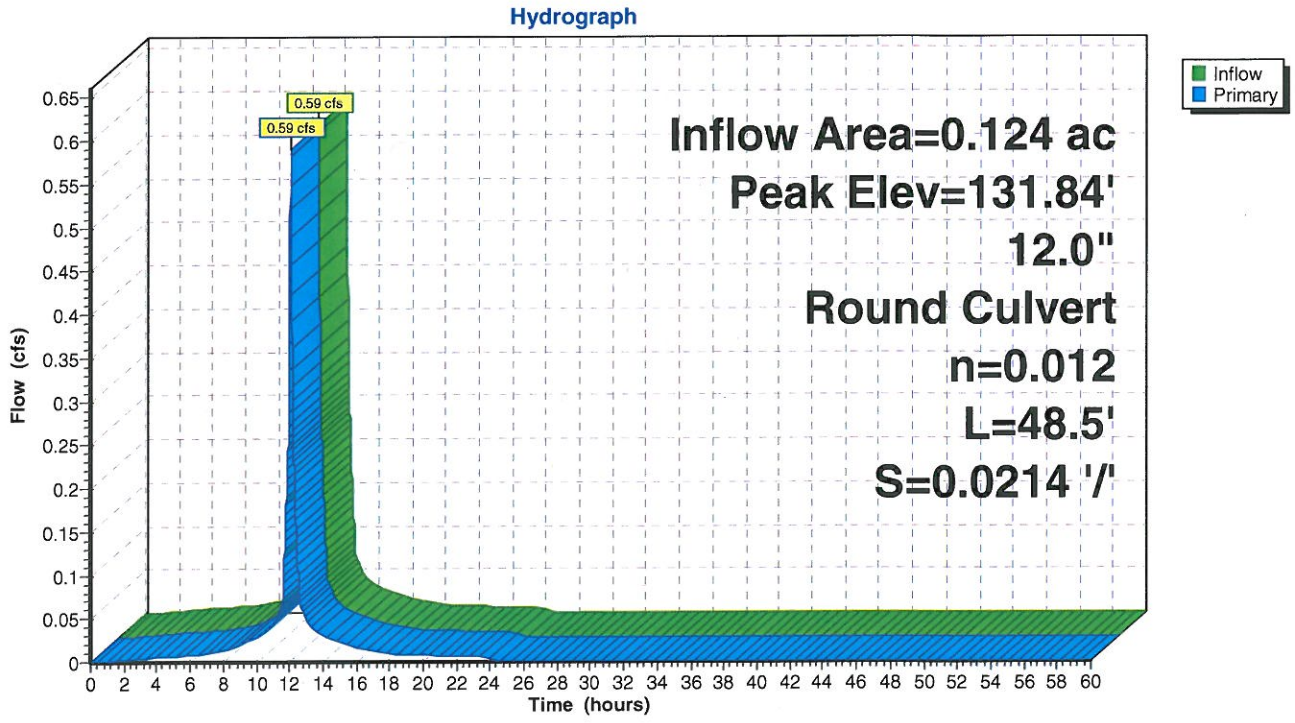
Inflow Area = 0.124 ac,100.00% Impervious, Inflow Depth = 4.46" for 10-Year event
Inflow = 0.59 cfs @ 12.07 hrs, Volume= 0.046 af
Outflow = 0.59 cfs @ 12.07 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min
Primary = 0.59 cfs @ 12.07 hrs, Volume= 0.046 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 131.84' @ 12.07 hrs
Flood Elev= 137.13'

Device	Routing	Invert	Outlet Devices
#1	Primary	131.46'	**12.0" Round Culvert** L= 48.5' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 131.46' / 130.42' S= 0.0214 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Primary OutFlow Max=0.59 cfs @ 12.07 hrs HW=131.84' (Free Discharge)
1=Culvert (Inlet Controls 0.59 cfs @ 2.11 fps)

Pond 1BP: CB @ 450+00



Summary for Pond 1CP: 24" RCP @ 112+00

[79] Warning: Submerged Pond 1AP Primary device # 1 OUTLET by 0.23'

Inflow Area = 13.200 ac, 22.96% Impervious, Inflow Depth = 2.60" for 10-Year event
Inflow = 19.89 cfs @ 12.46 hrs, Volume= 2.856 af
Outflow = 18.92 cfs @ 12.55 hrs, Volume= 2.856 af, Atten= 5%, Lag= 5.5 min
Primary = 18.92 cfs @ 12.55 hrs, Volume= 2.856 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 115.81' @ 12.55 hrs Surf.Area= 5,291 sf Storage= 3,770 cf

Plug-Flow detention time= 1.7 min calculated for 2.856 af (100% of inflow)
Center-of-Mass det. time= 1.7 min (842.6 - 840.9)

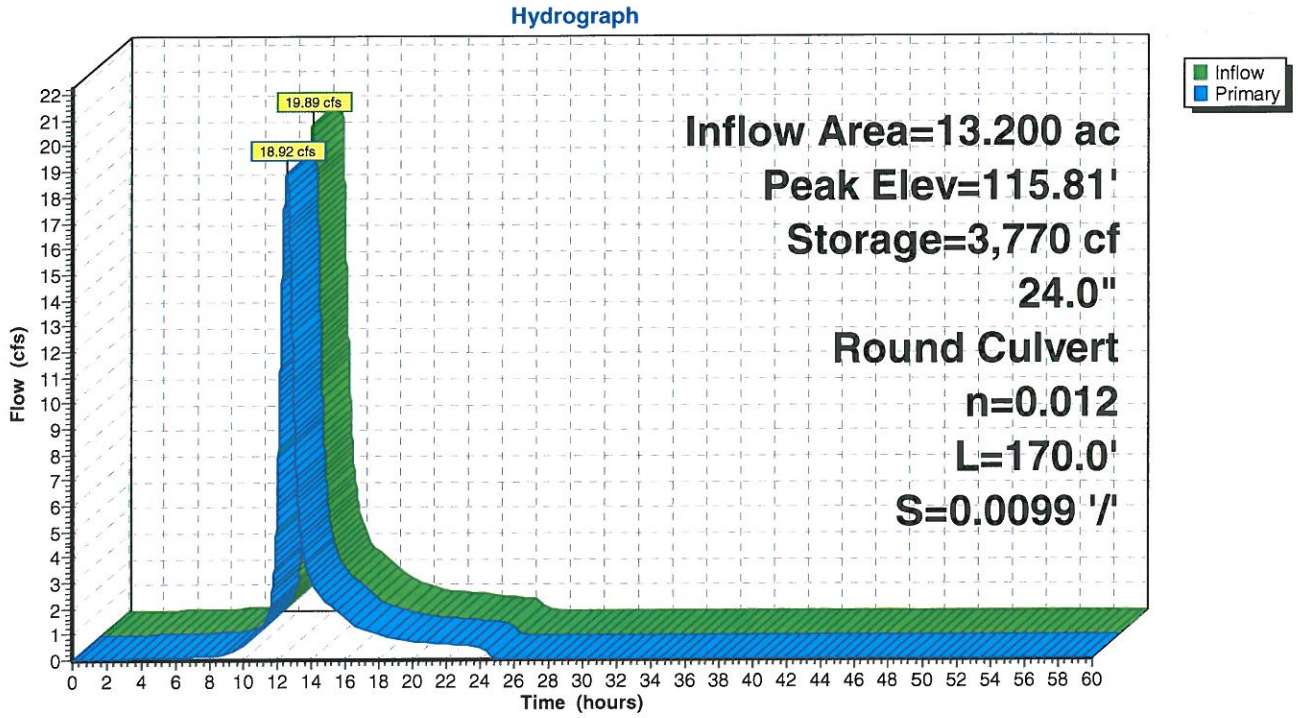
Volume	Invert	Avail.Storage	Storage Description
#1	113.78'	13,171 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
113.78	0	0	0
114.00	75	8	8
115.00	1,750	913	921
117.00	10,500	12,250	13,171

Device	Routing	Invert	Outlet Devices
#1	Primary	113.78'	**24.0" Round Culvert** L= 170.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 113.78' / 112.09' S= 0.0099 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf

Primary OutFlow Max=18.92 cfs @ 12.55 hrs HW=115.81' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 18.92 cfs @ 7.38 fps)

Pond 1CP: 24" RCP @ 112+00



Summary for Pond 2P: Detention Basin #1

[63] Warning: Exceeded Reach 2R INLET depth by 2.36' @ 12.70 hrs

Inflow Area = 20.361 ac, 11.56% Impervious, Inflow Depth = 2.43" for 10-Year event
Inflow = 32.60 cfs @ 12.33 hrs, Volume= 4.131 af
Outflow = 21.65 cfs @ 12.60 hrs, Volume= 4.076 af, Atten= 34%, Lag= 16.6 min
Primary = 21.65 cfs @ 12.60 hrs, Volume= 4.076 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 117.00' @ 12.60 hrs Surf.Area= 14,010 sf Storage= 32,652 cf

Plug-Flow detention time= 34.0 min calculated for 4.076 af (99% of inflow)
Center-of-Mass det. time= 26.0 min (869.9 - 843.9)

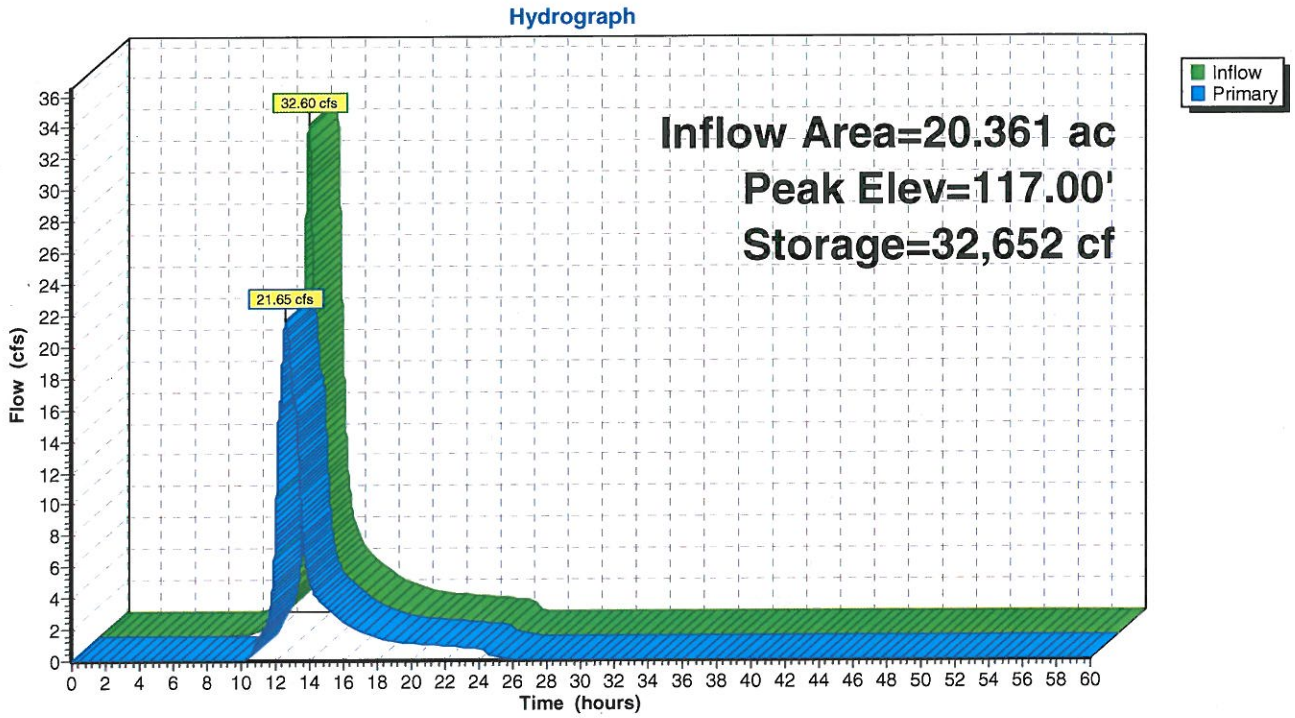
Volume	Invert	Avail.Storage	Storage Description
#1	112.50'	68,181 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
112.50	1,322	0	0
113.00	2,771	1,023	1,023
114.00	4,542	3,657	4,680
115.00	7,891	6,217	10,896
116.00	10,807	9,349	20,245
117.00	14,010	12,409	32,654
118.00	17,662	15,836	48,490
119.00	21,720	19,691	68,181

Device	Routing	Invert	Outlet Devices
#1	Primary	113.44'	**24.0" Round Culvert** L= 142.7' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 113.44' / 110.88' S= 0.0179 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf
#2	Primary	116.18'	**24.0" Round Culvert** L= 136.9' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 116.18' / 112.80' S= 0.0247 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.14 sf

Primary OutFlow Max=21.65 cfs @ 12.60 hrs HW=117.00' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 18.01 cfs @ 5.73 fps)
└—**2=Culvert** (Barrel Controls 3.64 cfs @ 4.44 fps)

Pond 2P: Detention Basin #1



Summary for Pond 4P: CB

[62] Hint: Exceeded Reach 4BR OUTLET depth by 0.17' @ 12.09 hrs

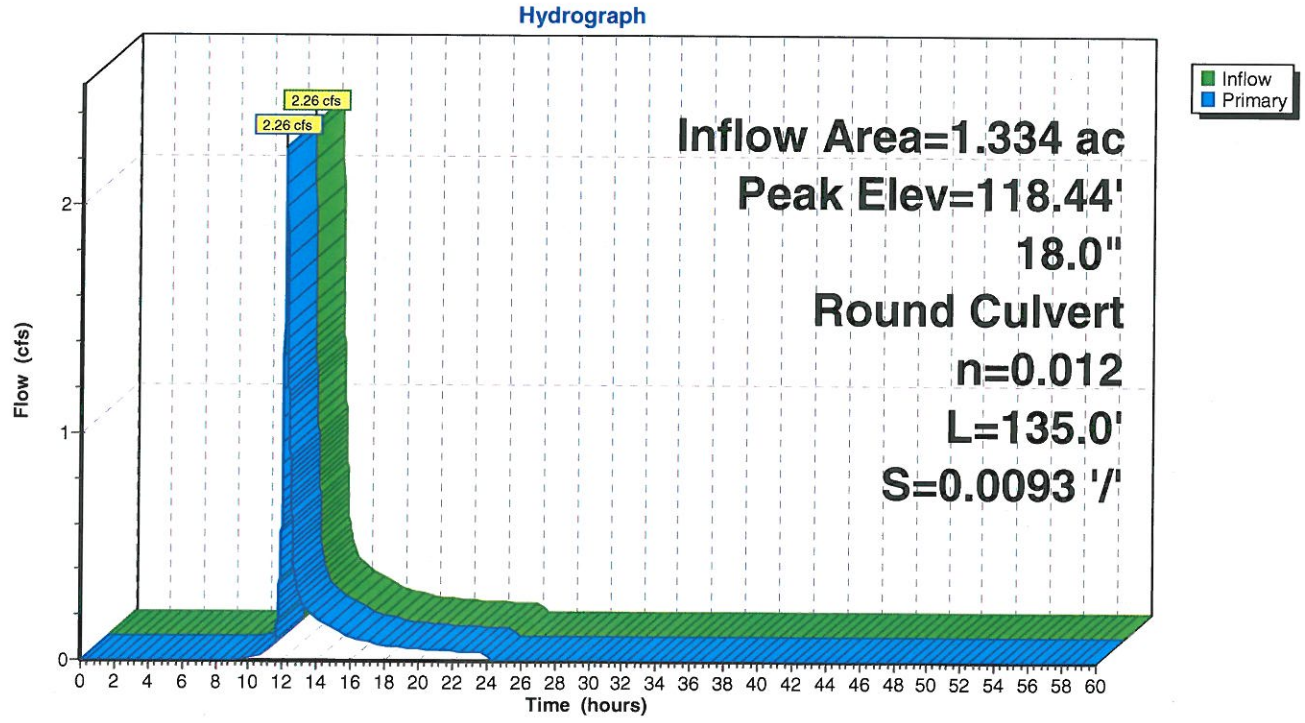
Inflow Area = 1.334 ac, 11.53% Impervious, Inflow Depth = 1.51" for 10-Year event
Inflow = 2.26 cfs @ 12.09 hrs, Volume= 0.167 af
Outflow = 2.26 cfs @ 12.09 hrs, Volume= 0.167 af, Atten= 0%, Lag= 0.0 min
Primary = 2.26 cfs @ 12.09 hrs, Volume= 0.167 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 118.44' @ 12.09 hrs
Flood Elev= 122.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	117.75'	**18.0" Round Culvert** L= 135.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 117.75' / 116.50' S= 0.0093 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.77 sf

Primary OutFlow Max=2.25 cfs @ 12.09 hrs HW=118.44' (Free Discharge)
↑**1=Culvert** (Inlet Controls 2.25 cfs @ 2.83 fps)

Pond 4P: CB



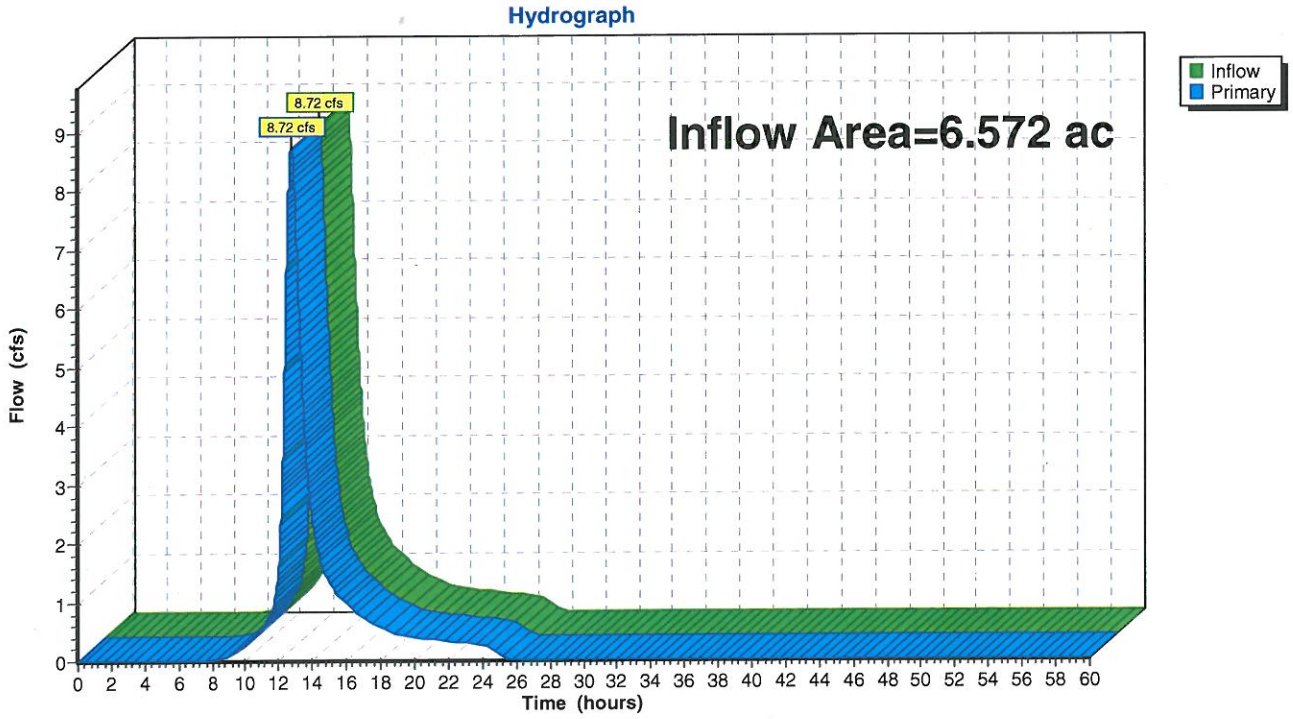
Summary for Pond 7P: (new Pond)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 6.572 ac, 32.18% Impervious, Inflow Depth = 2.81" for 10-Year event
Inflow = 8.72 cfs @ 12.74 hrs, Volume= 1.540 af
Primary = 8.72 cfs @ 12.74 hrs, Volume= 1.540 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 7P: (new Pond)



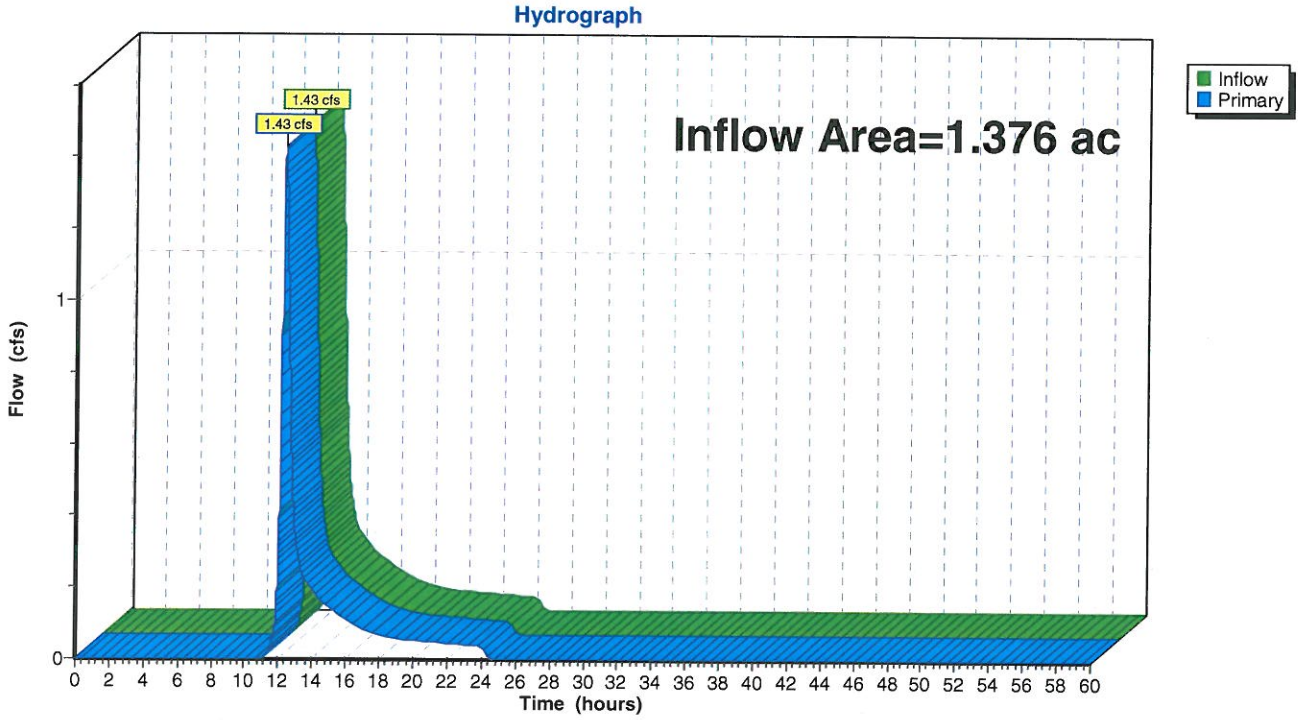
Summary for Pond 8P: (new Pond)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.376 ac, 13.41% Impervious, Inflow Depth = 1.39" for 10-Year event
Inflow = 1.43 cfs @ 12.28 hrs, Volume= 0.159 af
Primary = 1.43 cfs @ 12.28 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 8P: (new Pond)



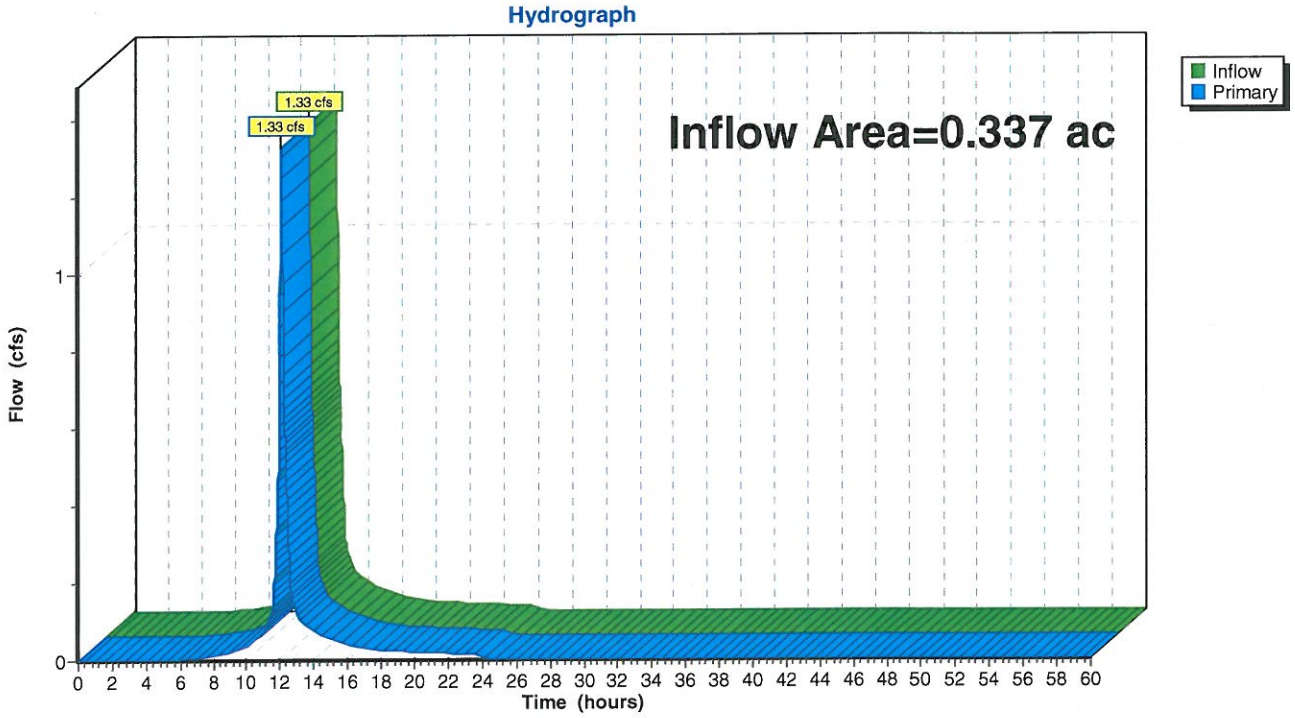
Summary for Pond 10P: (new Pond)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.337 ac, 48.13% Impervious, Inflow Depth = 3.29" for 10-Year event
Inflow = 1.33 cfs @ 12.07 hrs, Volume= 0.092 af
Primary = 1.33 cfs @ 12.07 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 10P: (new Pond)



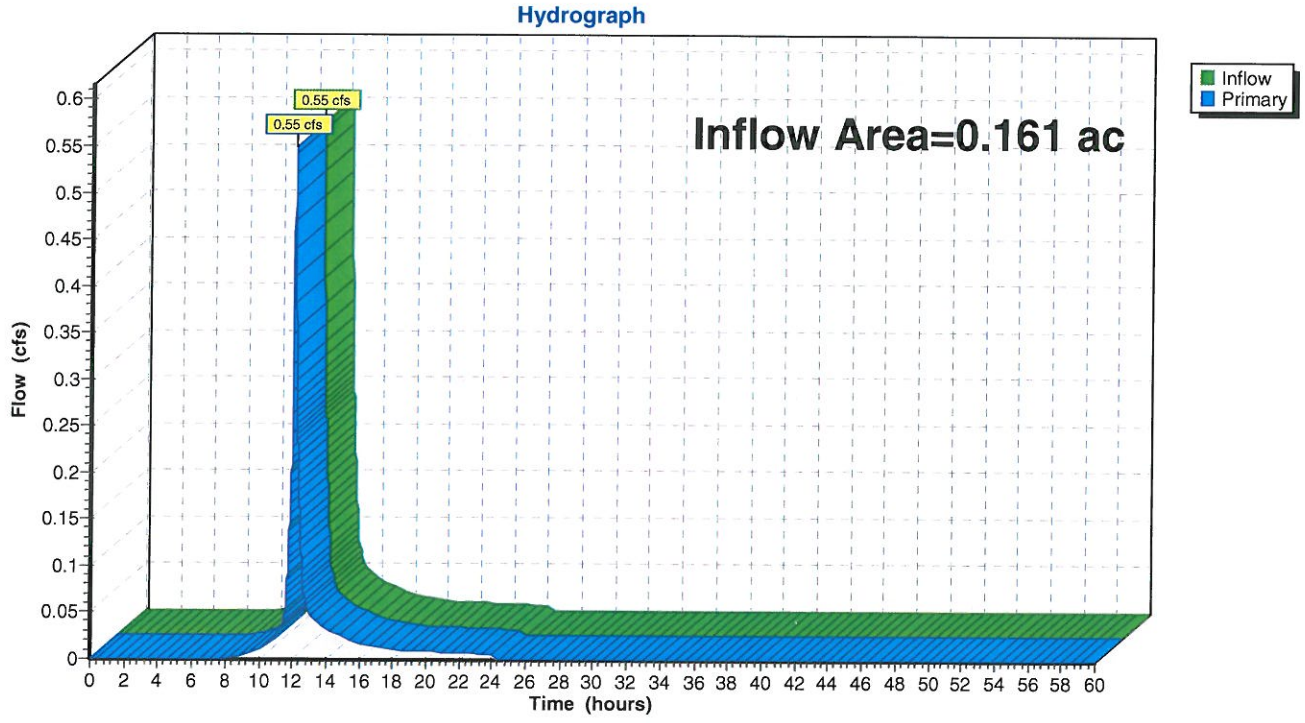
Summary for Pond 11P: (new Pond)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.161 ac, 25.99% Impervious, Inflow Depth = 2.81" for 10-Year event
Inflow = 0.55 cfs @ 12.07 hrs, Volume= 0.038 af
Primary = 0.55 cfs @ 12.07 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 11P: (new Pond)



Summary for Pond 12P: (new Pond)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.086 ac, 38.59% Impervious, Inflow Depth = 2.21" for 10-Year event
Inflow = 2.90 cfs @ 12.08 hrs, Volume= 0.200 af
Primary = 2.90 cfs @ 12.08 hrs, Volume= 0.200 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 12P: (new Pond)